THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. VIII. Nº 165—11th YEAR.] LONDON, FEBRUARY 15, 1859. [Subscription per Ann. { 15s. in Advance / 18s Credit.] Price 8d. Unstamped.

TO GAS COMPANIES.

FIRE-CLAY Retorts and Fire Goods.
The Advertiser has brought his Fire-Clay Retorts to great perfection, both as to quality and finish. Many have stood three and four years.

Every description of Fire Goods in any quantity always on hand. The Fire Clay is the very best in the North of England. Stock never less than 10,000 tons weathering.

Orders promptly executed.

Apply, G. H. RAMSAY, of Derwenthaugh Fire-Brick Works, near NEWCASTLE-ON-TYNE.
Aug. 22, 1856.

TO GAS ENGINEERS.

THE EQUITABLE GASLIGHT COMPANY are in want of a First-Class ENGINEER of great experience in the use of Clay Retorts. He must be a good Draughtsman, and possess a thorough knowledge of the construction of Buildings and Machinery.

Salary £400 a year and an excellent residence, rent and Taxes free, attached to the Works.

Applications, containing all particulars of past and present engagements, with specimens of Drawings, age, and general qualifications to be addressed to the Equitable Gaslight Company, No. 21, John Street, Adelphi, LONDON, endorsed "Engineer," before the 22nd instant.

TO GASHOLDER MAKERS, IRONFOUNDERS, AND OTHERS.

RUGBY GAS and COKE COMPANY
The Directors of this Company are desirous of receiving TENDERS for the erection at their works of a CAST-IRON GASHOLDER TANK, 72 feet diameter and 15 feet 4 inches deep, and likewise for a GASHOLDER with Columns, Girders, &c., for the same, according to the Plans and Specification, which may be seen at the office of the Company at Rugby.

All particulars may be obtained on application to Mr. PETER SIMPSON, Gas-Works, RUGBY, who will also, if required, supply a Tracing of the Plans and a copy of the Specification on the receipt of a Post-Office Order, or Postage Stamps to the amount of 10s.

Tenders for the same directed to the Chairman of the Company are requested to be sent in to me on or before the 5th day of March next, but the Directors do not bind themselves to accept the lowest or any Tender.

By order of the Directors,
C. E. WRATISLAW, Secretary.
Rugby, Feb. 7, 1859.

ON SALE, Two Station-Meters, in Round Cast-Iron Cases, made by Parkinson and Co. in 1847, to pass 10,000 cubic feet of Gas per Hour, and now at work at the Gas-Works, Leicester. Price £30 each net.

Further particulars may be obtained on applying to H. M. ROBINSON, Esq., Gas Office, LEICESTER; or to WEST and GREGSON, OLDHAM.

FOR SALE, a 60-inch Cylinder PUMPING-ENGINE, built in 1818 by Messrs. Boulton and Watt, and now about to be replaced by larger machinery. The Cylinder is low pressure, condensing, and single acting, with 8 feet stroke. The pump has a Piston, single acting, lifting 8 feet, and discharges 30 cubic feet per stroke. The Engine is equal to 11 strokes per minute against a pressure of 110 feet, and capable of making a stroke on 4½ lbs. of water, or 200 strokes on each cwt. of coal of inferior quality.

The Engine is of 65-horse effective power, is to be sold without boilers or air-vessel, and may be seen at work at East London Water-Works.

CHARLES GREAVES, Engineer.
January 27, 1859.

PHŒNIX GASLIGHT and COKE COMPANY.

NOTICE is hereby given, that the ADJOURNED HALF-YEARLY GENERAL MEETING of PROPRIETORS (holding, previous to November 16 last, Five Shares and upwards in the said Company) will be held, pursuant to the Act of Incorporation, on WEDNESDAY, the 16th instant, at Twelve for One o'clock, at the Bridge House Hotel, in the Borough of Southwark, for the purpose of declaring a Dividend to Christmas last; to elect Directors and Auditors for the ensuing year; and on other business.

By order of the Court of Directors.
CHARLES PRIDDEN, Secretary.
70, Bankside, SOUTHWARK, S. E.,
February 3, 1859.

The half year's Dividend will be clear of Income-Tax, and will be payable immediately after the business of the meeting has terminated; and afterwards at the Company's Office, at Bankside, on Thursday, the 17th inst., and also on Monday, the 21st inst., on both days from the hour of Twelve till Three, and from that time on Wednesdays only, from Two till Four o'clock.

COWEN'S PATENT FIRE-CLAY RETORTS.
JOSEPH COWEN and CO.,
BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE,
Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS RETORTS and OTHER OBJECTS in FIRE CLAY."

J. C. and Co. have been for many years the most extensive Manufacturers of Fire-Clay Retorts in the United Kingdom; and orders for Fire-Clay Retorts of all shapes and dimensions, Fire Bricks, and every other article in Fire Clay, are promptly executed at their Works as above.

COWEN'S GARESFIELD COAL AND COKE.
Coal and Coke Office,
QUAY SIDE, NEWCASTLE-ON-TYNE.

FIRST PRIZE IN THE PARIS EXHIBITION.

JOHN RUSSELL AND CO.,
THE OLD TUBE WORKS,
CHURCH HILL, WEDNESBURY;
ALMA WORKS,
WALSALL, STAFFORDSHIRE;
and 69, UPPER THAMES STREET, LONDON,
Original Manufacturers of Wrought-Iron Gas Tubes, and Holders of the present Patents; Inventors and First Makers of LAP-WELDED FLUES for Steam Boilers.

J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water, and the largest Orders may be executed in a few days.

Gun Metal, and all other kinds of Cocks, Stocks, Dies, and Taps, Galvanised Tubes, &c.

N.B. All Goods thoroughly Tested before sent out, and Warranted.

TO GAS INSPECTORS.

WANTED, an Active, Steady, and Intelligent Man to act as INSPECTOR of Gas-Meters, Water-Meters, and Water-Taps. He must write a good hand, understand the construction and be able to repair both Wet and Dry Gas-Meters, and Water-Meters.

Application in applicants' handwriting, with references, and stating Salary required, to be addressed to THOS. TREWHITT, Secretary to the Hartlepool Gas and Water Company, HARTLEPOOL.
Hartlepool, Feb. 3, 1859.

TO DIRECTORS OF GAS COMPANIES.

THE Advertiser, a practical Gas Engineer, is at present in want of a Situation as FOREMAN or MANAGER. Has had considerable experience in the erection of Gas-Works, and, being a good Penman, with a knowledge of accounts, would prove an acquisition to any parties requiring his services.

First-Class testimonials of Character, and Security if required.

Address R. J., 78, Bamber Street, LIVERPOOL.

TO GAS COMPANIES.

WANTED, by a Young Man of Twelve years' experience, a Situation as INSPECTOR or FITTER. Can fix and repair Fittings and Meters, and lay Services. Is thoroughly competent to undertake the whole repairs of Street Lamps. A seven years' Character will be given from his last employers.

Apply to D. C., 3, Frederick Street, Neckinger Road, BERMONDSEY.

SOUTH METROPOLITAN GAS-LIGHT AND COKE COMPANY.

NOTICE is hereby given, that an EXTRAORDINARY MEETING of the PROPRIETORS of this Company will be held at the London Tavern, in the City of London, on WEDNESDAY, the 9th day of March next, at Two o'clock precisely, to elect a Director in the place of Mr. Alderman FARNCOMB, who has resigned.

Any Proprietor intending to become a Candidate must give notice in writing, at the Office of the Company, at least Fourteen days previously to the day of Election

By order of the Directors,
THOMAS LIVESEY, Secretary.

N.B. Votes may be given either personally or by proxy, but no Shareholder is entitled to vote as a proxy unless the Instrument appointing such proxy is transmitted to the Secretary two days before the holding of the Meeting at which such proxy is to be used, nor is any person allowed to represent as proxy more than five Shareholders.

Old Kent Road, Feb. 14, 1859.

BLAYDON BURN AND LOW BENWELL FIRE-CLAY RETORT AND FIRE-BRICK WORKS, NEAR NEWCASTLE-ON-TYNE.

WILLIAM COCHRAN CARR begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the Manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other Articles in Fire-Clay, executed on the shortest notice, and on the most reasonable terms.

London Agents:
JAMES LAWRIE & CO.,
63, OLD BROAD STREET, CITY, LONDON.

CHARLES BOTTEN and SON, ENGINEERS & METER-MAKERS,
CRAWFORD PASSAGE, RAY STREET,
CLERKENWELL, LONDON (E. C.).
Manufacturers of Station and Patent Protector Consumers' Meters, Patent Slide-Valves, Gas-Fittings, Pipes, &c.

Also, High-pressure Cocks, Hydrants, Closets, and all Water-Fittings.

EIGHTON MOOR GAS COALS.—Parties wishing to be supplied with these first-class Gas Coals will please to apply to Mr. MATTHEW NESBIT, EIGHTON MOOR OFFICE, NEWCASTLE-UPON-TYNE. These coals are well known as among the richest in gas, and working the roundest on the River Tyne. They are extensively used by metropolitan gas works.

PADDON and FORD respectfully invite the attention of Gas Companies and Managers to their PATENT STREET LAMP REGULATOR, which ensures any required consumption.

By its use a great saving is effected, and the item of "Unaccounted-for Gas" considerably decreased.

PADDON and FORD, Patent GAS-METER AND APPARATUS WORKS,
GRAY'S-INN-ROAD, LONDON,
Manufacturers of WET and DRY GAS METERS, STATION METERS, GOVERNORS, EXPERIMENTAL APPARATUS, LANTERNS, &c. &c.

Contractors for the erection or alteration of Gas-Works; and every description of Apparatus required in Gas-Works supplied.

CRYSTAL PALACE DISTRICT GAS COMPANY.

NOTICE is hereby given, that the GENERAL ANNUAL MEETING of the SHAREHOLDERS of this Company will be held at the "Albion," 153, Aldersgate Street, London, on TUESDAY, the 1st day of March, 1859, to receive the Report of the Directors, to declare a Dividend, and for general business. The Chair will be taken at Three o'clock precisely.

By order of the Board,
MAGNUS OHREN, Secretary and Manager.
Offices, Bell Green, Sydenham, S.E., Feb. 11, 1859.

WILLIAM STEPHENSON & SONS,
THROCKLEY,
NEWCASTLE-ON-TYNE,
MANUFACTURERS OF EVERY DESCRIPTION OF
FIRE BRICKS, CLAY RETORTS, LUMPS, TILES,
&c. &c.

LONDON OFFICES:
76, KING WILLIAM STREET, CITY.
A large stock of Fire-Clay Goods always on hand in London, at the lowest wharf prices, at Messrs. CHRISTIE & Co.'s Wharf, 64, Bankside, SOUTHWARK.

TO MANAGERS OF GAS-WORKS.

THE Subscriber, having turned his attention to the MAKING of CAST-IRON GAS RETORTS, begs leave to intimate that he is prepared to offer and contract with Proprietors of Gas-Works in England, Ireland, and Scotland, for the supply of the same.

The Advertiser has extensive premises, and all his Retorts are cast VERTICALLY, according to the most approved mode, and without nails or chaplets, thus ensuring regularity of thickness. He has had the satisfaction of supplying upwards of 2000 Retorts for the United Gaslight Company of Liverpool, and several hundreds for companies in Preston and Glasgow, which may be held as sufficient evidence of the superior quality of the Retorts supplied.

JAMES HENDRIE,
IRONFOUNDER, KILWINNING, N.B.
January, 1859.

JOURNAL OF GAS LIGHTING NEWSPAPER ONE PENNY

CROSLEY & GOLDSMITH'S

PATENT SELF-ADJUSTING & COMPENSATING GAS-METERS

CANNOT BE OVER OR UNDERCHARGED WITH WATER,

and they consequently register the quantity of Gas consumed with greater accuracy than Meters in which the Water-Line is variable.

MANUFACTURED BY

CROSLEY & CO.,

GAS-METER MANUFACTURERS,

103, SOUTHWARK BRIDGE ROAD, LONDON.

N.B. The Patent Self-Adjusting and Compensating Apparatus may be applied to the ordinary Meter.

Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night.

Also, Manufacturers of EXPERIMENT METERS, GASHOLDERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c. &c., similar to those used by Mr. King, of Liverpool.

REPORT ON CROSLEY AND GOLDSMITH'S PATENT METERS.

London, November 17, 1858.

Having been invited by Mr. William Crosley to examine the performance of the gas-meter recently patented by himself and Mr. Goldsmith, and manufactured by the firm of Crosley and Co., of 103, Southwark Bridge Road, we assembled at their manufactory, and now report the result of our examination.

We did not think it necessary to check the accuracy of the testing gasholder employed, as Mr. Barlow had done this on a prior occasion; and he assured us that he had found the index to agree, foot by foot, with a standard cubic foot measure containing 62·321 lbs. of distilled water, at the temperature of 62° of Fahrenheit and a barometric pressure of 30 inches, being the standard of measure established by law. Our first care, therefore, was to so adjust a 20-light experiment-meter that its registration coincided exactly with the index of the testing gasholder, which meter we subsequently used as the standard testing meter in the experiments hereinafter recorded, taking care from time to time to check its accuracy by the gasholder.

The chief novelty in Messrs. Crosley and Goldsmith's meter consists in an ingenious contrivance for maintaining the water at a uniform level, so that the capacity of the measuring-chamber shall not be affected by a deficiency or by an excess of water. It is well known that the registration of ordinary wet gas-meters, and more especially of the smaller sizes, is liable to considerable variation from this cause; and we consequently selected a 3-light meter for our first series of experiments, and commenced by subjecting it to the severest and most unfair test to which any meter can be put—that is, by adding lights till they commence to burn unsteadily. In this manner, a 3-light meter was tested with 10 lights, with the following results:—

EXPERIMENT *No.* 1.—3-*Light Patent Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
10	m. s. 30 23	25·36	25·00	1·44 slow	50·08	6·2

During the course of this experiment we added 10 cubic inches of water, without producing any appreciable effect upon the registration or upon the steadiness of the lights. We then reduced the number of burners to 3.

EXPERIMENT *No.* 2.—3-*Light Patent Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
3	h. m. s. 1 13 5	19·67	20·00	1·67 fast	16·15	1·8

We continued adding water by 5 cubic inches at a time during this experiment, till 20 cubic inches had been added in all, without flooding the syphon or altering the ratio of difference between the two meters; but with 45 cubic inches of water the syphon became flooded, and the lights were extinguished.

Our next experiment was with 1 light, by which means we obtained the results of experiments with the maximum and with the minimum rate of consumption of which this sized meter is capable.

EXPERIMENT *No.* 3.—3-*Light Patent Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
1	m. s. 50 0	4·91	5·00	1·83 fast	5·89	1·1

The extreme range of variation from absolute truth to which the meter is liable, is therefore between 1·44 per cent. slow and 1·83 per cent. fast, till the surplus-water reservoir is exhausted, when the meter becomes an ordinary one; but when it is borne in mind that this reservoir contains 54 cubic inches of water to compensate for evaporation—that some ordinary high-spouted 3-light meters are liable to variations to the extent of 60 per cent., according to the height of the water-line, and that the tolerated variation is 4 per cent at the adjusted water-line—it is evident that the objects aimed at by the inventors have been in a great measure successfully attained.

We continued our experiments by subjecting a 20-light meter to similar trials, commencing with 38 lights.

EXPERIMENT *No.* 4.—20-*Light Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
38	m. s. 8 17	19·94	20·00	0·3 fast	144·4	1·75

We then added water till the syphon became flooded and the lights extinguished, which took place by the addition of 70 cubic inches of water. We then repeated the same experiment with 60 cubic inches of water, added after the overflow-plug had been replaced.

EXPERIMENT *No.* 5.—20-*Light Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
38	m. s. 8 8	19·94	20·00	0·3 fast	147·0	1·75

It will be seen that the registration was not affected by the additional quantity of water; but, being desirous of trying the effect of passing a larger quantity of gas, and there being no means of burning more, we opened a cock leading into a chimney-flue by which the gas could escape.

EXPERIMENT *No.* 6.—20-*Light Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
Not determined	m. s. 6 55	19·99	20·00	0·05 fast	173·4	2·25

It now only remained for us to ascertain the effect produced by reducing the consumption to a low rate; but, as the burning of 20 feet of gas through a single burner would have occupied several hours, we thought our object would be sufficiently accomplished by burning four lights.

EXPERIMENT *No.* 7.—20-*Light Meter.*

Number of Lights supplied.	Duration of the Experiment.	Consumption by Test Meter in Feet.	Consumption by Patent Meter in Feet.	Variation per Cent. in Index of Patent Meter.	Rate of Consumption in Feet per Hour.	Friction of the Meter in Tenths of an Inch of Pressure.
4	h. m. s. 1 6 40	19·87	20·00	0·65 fast	17·8	0·9

The surplus-water reservoir will hold 208 cubic inches of water, available to compensate for the waste by evaporation; and, as the meter will register correctly with a surplus of 60 cubic inches, there is ample provision both for the abstraction of water by evaporation and for an increase by condensation.

We also tested the effect of suddenly opening and closing the gas supply-cock, and found no inconvenience to arise on this head. The flow of gas was steady and uniform, and the pressure was not sensibly affected by the action of the pumping machinery.

Our experiments lead us to the conclusion that the patent meter is a practical and substantial improvement upon the ordinary wet gas-meter, inasmuch as the capacity of the measuring-chamber is not diminished by an excessive supply of water, nor can it be increased by drawing off water. On the one hand, therefore, the consumer is protected against any intentional or negligent overfilling of the meter, the result of which is to exaggerate the registered quantity of gas actually consumed; and, on the other hand, the gas manufacturer is protected against the fraudulent abstraction of water by the consumer, the effect of which in the ordinary meter is to cause it to register less gas than is really supplied. Time alone can determine whether these advantages are gained at the expense of its durability, or by any complexity which may render its utility doubtful; but, so far as we are able to form an opinion upon these points, the patent meters are not liable to any greater derangement than the ordinary wet meters, nor do we believe they will be less durable.

We ought to remark that these meters require to be adjusted and tested after being worked a short time under pressure, in order to give the pumping apparatus sufficient time to raise the water to the proper level in the measuring-chamber. Should this precaution have been neglected, the meter will register rather more than the correct quantity of gas supplied after that level has been attained; and this is an error into which persons who are accustomed to the testing of ordinary wet meters are liable to be led in testing the patent meters.

We have already condemned by implication the practice of transmitting more gas through a meter than it is intended to supply. That quantity is regulated by manufacturers generally upon the basis of 100 revolutions of the measuring-drum per hour, and any increase upon this speed is attended with such diminution in the effective pressure of the gas after it has passed the meter, that our having made experiments at greater speeds must not be taken as an expression of our approval of the system of propelling meters at three or four times their proper speed; on the contrary, we condemn it strongly, as involving an increase in the pressure at which the gas will have to be supplied in the mains, and a consequent augmentation in the leakage.

(Signed)

GEORGE LOWE, *C.E., F.R.S., Engineer-in-Chief to the Chartered Gas Company.*

JOHN KIRKHAM, *C.E., late Engineer-in-Chief of the Imperial Gaslight Company.*

GEDDIE PEARSE, *late Engineer-in-Chief to the Incorporated and Provincial British Gaslight Companies.*

THOMAS G. BARLOW, *Civil and Consulting Gas Engineer.*

CONTENTS.

	PAGE
Leading Articles:—	
Our Tenth Anniversary	75
Notes upon Passing Events	76
On the Existing Relations of the Gas Companies and of their Workmen	77
Circular to Gas Companies	79
Communicated Articles:—	
Regulations for the Supply of Gas at Marseilles	81
Correspondence:—	
Scurfing Clay Retorts	82
Register of New Patents:—	
Newton's Improvements in Gas-Meters	82
Greaves' Improvements in constructing Streets, Roads, and Ways	82
Davies' Process and Apparatus for the Extraction of Oils	83
Bovill's Improvements in the Manufacture of Gas, and also of Coke and other Fuel	83
Provisional Protection	84
Notice of Intention to Proceed	84
Legal Intelligence:—	
Court of Queen's Bench.—The Coventry Canal Company, *Appellants;* the Overseers of Atherstone, *Respondents*	84
Middlesex General Sessions—	
Gas and Water Companies' Appeals	84
The Imperial Gas Company, *Appellants;* the Parish of Paddington, *Respondents*	85
Greenwich Police Court.—Badger *v.* Crystal Palace District Gas Company	85
Miscellaneous News:—	
Meeting of the Western Gas Company (Limited)	85
Report and Balance-Sheet of the Phœnix Gaslight and Coke Company	86
The Manchester Gas-Meters	86
Metropolis Gas Inquiry	89
Gas and Water Supply of Colchester	91
Embezzlement by a Gas Company's Collector	92
The Deptford Pumping-Station	92
The Manchester Gas-Meters	92
The Dundee Gaslight Company's New Telescopic Gasholder	92
Price Current	92

NOTICES.

The subscription is 15s. per annum, if paid in advance during the month of January, or 18s. credit, in two sums of 9s. each, in July and January of each year. Post-Office orders must be made payable at the Charing-Cross Money-Order Office, to William H. Bennett, No. 42, Parliament Street, Westminster.

The next number will be published on Tuesday, March 1, and the subsequent numbers on each successive alternate Tuesday.

Stamped copies, when forwarded by post, must be folded so as to expose the stamp; they are otherwise liable to the full postage charge for letters.

This JOURNAL has been duly registered at the General Post Office for transmission abroad.

All Communications to be addressed to the Editor, No. 42, Parliament Street, Westminster; and orders for Advertisements to the Publisher, Mr. W. B. King, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING,
WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, FEBRUARY 15, 1859.

OUR TENTH ANNIVERSARY.

THERE are times and seasons in the strong current of events and busy avocations of life when it is meet and pleasant to collect our friends about us and to talk over the days that are gone; and no time is more fitting than an anniversary. The celebration of birthdays has long been an honoured, a social, and a useful custom, and none but old maids would wish it abrogated. On such occasions it is usual for the individual who has added another year to his life to receive the congratulations of his friends, accompanied by their kind wishes of many happy returns of the day; and if, perchance, he be so happy as to assemble them round his board, he enjoys the privilege of listening to his praises and of talking about himself without being considered vain or egotistic. We gladly seize a similar opportunity on this our tenth anniversary of addressing the goodly collection of our kind friends and well-wishers in all parts of the world where the advantages of gas lighting are known. Some of them were with us when we were ushered into the world, and supported our infant steps, and have accompanied and assisted our progress to this very day. To them more especially we extend the hand of fellowship, and most heartily respond to their wishes that we may go on so together for many years to come.

It was on the 10th of February, 1849, that the first number of the JOURNAL OF GAS LIGHTING was published. Before that time there was no special organ of the important and increasing gas interest. The publication of a journal confining itself entirely to matters connected with the manufacture and distribution of gas, and to the interests of gas companies and gas consumers, was an experiment; and there were not a few croakers who declared that it could not succeed. At the first, indeed, it met with but little encouragement, yet feeling assured that the extensive class interested in gas illumination could not fail in time to see the advantage of possessing a medium for expressing their opinions, and for giving publicity to the progress of invention in that valuable and important branch of industry, we persevered in our efforts, and it was not long before our confidence was justified by numerous and every year increasing supporters.

While expressing grateful acknowledgement of favours received, we may perhaps be excused on such an occasion as the present for alluding to the means we have adopted for gaining them. It has been our endeavour to render the JOURNAL OF GAS LIGHTING as complete a record as was possible within its limited space of all the events and improvements and projects connected with gas illumination, and in doing so we have spared no pains in obtaining information, in giving reports, and in pursuing investigations that tended to advance the progress of gas lighting or improve the processes of its manufacture. We succeeded in obtaining the aid of men of first-rate ability and scientific knowledge, and we can proudly point to several series of articles in the pages of our JOURNAL that serve as standards of reference in various processes and manufactures employed and applied in the making and distribution of gas. We have not failed, in discharging this part of our duty, to give abstracts of the specifications of all inventions relating to the supply of gas; and those improvements which promised to be of practical value have been considered at greater length and their substantial merits have been pointed out. In endeavouring to accomplish the objects which we desired, we soon found that the limited space of our JOURNAL was quite inadequate to allow the insertion of many matters of interest that it was desirable to publish, and we at length adopted the plan of fortnightly publication. At the same time, we took that opportunity to extend the sphere of our operations, and to comprise among the topics of special consideration the subjects of water supply and sanitary improvement. This change was in a great measure forced upon us by the closer combinations of the subjects of gas lighting, sewerage, water supply, and the public health, by the Act of Parliament for the government of the metropolis, and by the officious interference by provincial boards of health with the manufacture of gas. Since that time each volume of the JOURNAL OF GAS LIGHTING has been more than double the size of its predecessors, and we have been enabled to give extended reports of important trials and investigations which it would have been otherwise impossible to have inserted at the length their importance deserved.

Turning from facts to opinions, we may observe that the JOURNAL OF GAS LIGHTING, though it has carefully kept aloof from the squabbles of party politicians, has nevertheless supported a certain course of politics, in the true meaning of the term. Its politics are Conservative Progress and Self-Government. While at all times anxious and to the best of our ability striving to advance every substantial improvement, whether in the processes of making gas, in the condition of its supply, or in the administration of affairs, we have strenuously opposed all bubble schemes and factious projects got up by interested individuals for self-aggrandizement, and which invariably end in squandering the money of dupes, in injuring the property of established companies, and in loss to the public. We have also combated strongly, and we venture to think not without effect, the system of centralization which, if not effectually opposed, will go far to destroy the self-reliance and energy of the people, on which the greatness of this nation mainly depends. In carrying out our views we have acted independently of all parties. We have strong convictions of what are the best measures to be pursued, and we have endeavoured to impress those convictions on our readers as strongly as we were able, without regard to giving offence to public bodies or factious coteries. In taking this course we had no desire to become martyrs to the public good, but we felt assured that "honesty is the best policy" in the conduct of a public journal as well as in commercial affairs, and by adhering to that maxim we have succeeded in placing the JOURNAL OF GAS LIGHTING in a far higher position than a dependent temporizing course of policy could have done. We have reached our tenth anniversary in the plenitude of health; we thank our many friends most cordially for their support, and we hope that they and we may live to rejoice at "many happy returns of the day."

NOTES UPON PASSING EVENTS.

At last it appears that the great Metropolitan Drainage works have been actually begun, notwithstanding the difficulties raised within and without the Board. This is a great event in the history of London, and so "King Thwaites" evidently considers it; for he has made about as much fuss over the commencement of this first contract, as a hen is said to do over her one chick. But it may shrewdly be suspected that the manifest repugnance of the population of the Metropolis to submit to the dictation of the Central Government, has contributed far more to securing the result which has given rise to the mutual congratulations of the members of the Metropolitan Board of Works, than any decided opinions of the leading officers of that body itself have done. It may be ungracious to refer much to the past, and certainly in public life it is wiser to enjoy the ends obtained, than to analyze too deeply the motives or conduct of those who obtained them; yet the lessons which might be learnt from recent events can hardly yet be forgotten, nor can there be much hesitation on the part of the public in attributing to the various parties concerned their fair share of the merit of carrying through the scheme which has been so happily begun. For years Mr. Bazalgette has stood forward to fight the battles of common sense and of the ratepayers' interests; for years he has been exposed to the unjustifiable attacks of a clique of impudent quacks, supported, unfortunately, by the influence of Lord Palmerston's government; but at length he has succeeded in persuading the representatives of the Ratepayers to listen to the voice of reason, and he has within the last fortnight "broken ground" in the great work which will, we hope, transmit his name to posterity. Emphatically it is to Mr. Bazalgette that the merit of carrying into execution the scheme for the great intercepting sewers is principally due; and most sincerely do we congratulate him on the proud position he ought now to occupy in the minds of thinking Londoners.

But whilst we may thus, in the Metropolis, congratulate ourselves on the prospect of a speedy improvement of the Thames through the interception of the town drainage, it would appear from the Reports of Sir John Rennie, that we are menaced with the destruction of our "silent highway," by the erection of sundry landing-stages and wharves near London Bridge. There is great truth in Sir John's rambling, awkwardly written remarks upon this subject; and unquestionably the interferences with the advance of the flood tide which were proposed to be formed in the cases he referred to, would have been detrimental both to the navigation of the river, and to the stability of the Bridge over which the worthy knight watches with such fatherly care. But the oddity of the matter is, that it should be necessary for a private individual to interfere in such cases at all. There is a new fangled Board of Conservators of the Thames, and surely it is their duty to look after the noble river committed to their charge; yet one half-tide wharf is thrust forward into the stream after another, without any systematic plan, or any apparent reference to surrounding objects, in a manner quite as objectionable as would be the case were the landing-stages now attacked really executed. The interests of the country are too deeply involved in the maintenance of its River navigation for the present unsatisfactory state of the law, or of the administration, on such subjects to remain as it is at present. Perhaps the issue Sir J. Rennie has thus sought to raise, with respect to the river near London Bridge, may advance the solution of the question; but the necessity for so raising it, and the recent strange proceedings at Wisbech, certainly reflect little credit on the law-makers who could allow such important interests as are involved upon both the Thames and the Nene to be imperilled to the extent which seems actually to be the case.

At Wisbech, indeed, the dispute about the River has assumed almost a degree of Homeric absurdity. Proceedings were taken against the Nene Valley Commissioners, before the Bench of Magistrates, for the purpose of compelling the said Commissioners to remove some dams they have lately thrown across the river, in order, expressly, to limit the range of the tidal scour. Engineers were examined on both sides, and finally the Magistrates decided that the dams were nuisances, and that they ought to be removed. Not satisfied with this decision, the Nene Valley Commissioners seem, however, to have carried the matter into one of the Vice-Chancellor's Courts; but before that functionary learned in the law had given his decision, the inhabitants of Wisbech thought that they could cut the knot by forcibly pulling up the dams. The Court of Chancery does not seem disposed to tolerate this kind of Lynch law, so it has ordered the dams to be re-erected, and the parties who made themselves conspicuous in their demolition to be put in prison. Altogether, "there is a very pretty quarrel" as the matter stands; but we cannot refrain from expressing the opinion that it is very unfortunate that the town of Wisbech should have been so ill advised as to peril a really good cause by the vulgar, childish intemperance with which it has sought to enforce its rights.

A subject of perhaps nearly as much general interest as the one connected with the navigation of our rivers, was brought before Parliament the other day by Mr. Wilson—viz., the subject of rating Government Offices and establishments for local purposes. Of course the party in power resisted anything like an increase of payments on this score; but the principle of the justice of such contributions seems to be now too decidedly admitted for any Government long to resist its application. We are hardly prepared to say whether the nation at large will ultimately be the gainers by the application of this principle; but certainly the Metropolis would be so, and really it does appear hard that the nation in general should continue to cast upon particular districts some very heavy burthens, which are created, perhaps, for the especial benefit of the establishments for transacting national business. At any rate, the inhabitants and ratepayers of such towns as Woolwich, Chatham, Portsmouth, Plymouth, &c., ought to raise statues to the honour of Mr. Wilson, who is so liberal with the public money now that he is no longer in office. Thus it ever was: when the ins become outs, honest men may come by their own!

Whilst upon this rating question, we cannot refrain from repeating the advice we have so often given to the great industrial Companies, to combine for the purpose of bringing before the Legislature the necessity "for laying down rules of rating more applicable to their property, rapidly increasing in amount," (which property, we suppose,) "does not seem to have been in contemplation when the Parochial Assessment Act passed." The words just quoted are extracted from Lord Campbell's judgment in the recent case of the *Coventry Canal Company v. the Overseers of Atherstone;* but the conduct of the Metropolitan Parishes in raising the ratings of the Gas, Water, and Railway property within their limits, ought to convince the Directors of those enterprises that simultaneous and vigorous action is required on their part for the defence of their interests. The selfish, cowardly indifference with which the various separate Companies have stood by, whilst one of their colleagues after another has been victimized by parochial authorities, and the very unsatisfactory tribunals before which this class of actions is usually tried, must be cast aside; and the whole question must be seriously and equitably discussed before the Legislature itself. Surely the Gas, Water, Railway, Canal, and Dock interests must be sufficiently powerful to make themselves heard in Parliament, even amidst the din of a Reform discussion; and we certainly think that they should insist upon having the great question of parochial rating referred to a Select Committee—not to a Commission, as Mr. Chadwick would suggest—and they should take care that their case be fully and fairly stated, so as to enable the Legislature to arrive at a proper judgment on a subject which has already caused so much dissatisfaction and heart-burning. We cannot but suspect that this is a question which ought to come within the attributions of the Board of Trade; and it happens, fortunately for the public, that the present head of that department is both a conscientious and a capable man, and one, moreover, who has had much experience in the decision of rating cases, from the mere fact of his having been chairman of the Quarter Sessions of his county. Under such circumstances, it seems to us that the present would be about the best time for attempting to settle the question,

The London public has lately been sadly affected by a series of accidents occasioned by the fall of badly-built houses, and the farce of an inquiry into the causes of those accidents has been regularly enacted. Hitherto the only result has been that, upon the strength of Mr. Marsh Nelson's very unsatisfactory, and very unscientific, report on the Polytechnic accident, a desire has been expressed for the creation of an additional number of paid inspectors, of about as useless a character as the District Surveyors have proved themselves to have been. Even last week another accident of the description we mentioned has oc-

curred at Dalston, and, as usual, the parties who really ought to have been made responsible were excused on the score of their only having committed an error of judgment. "They manage these things," we think, "better in France." A short time since a house fell in at Boulogne, somewhat like the house at Dalston is said to have done; and in the former case the architect and builder have been tried for culpable homicide, by imprudence, and they have been punished by fine and imprisonment. The fact is, that we in England are too lenient in matters of the kind referred to. A man has no right to undertake operations for which he is not properly qualified, when the consequences of his "errors of judgment" may be fatal to others. We have always expressed ourselves adverse to the system of Architectural diplomas; but really, if parties assuming to discharge the duties of Architects be not made really responsible for their acts in that capacity, we shall begin to suspect that some examination formula must be adopted in order to keep empirics out of the profession. But however that may be, we are sure that one or two cases of fine and imprisonment, as in the instance of MM. Delhière and Dieuset, of Boulogne, would do far more to prevent the recurrence of accidents from bad building, than the nomination of any number of inspectors who could write such nonsense as we have been favoured with on the subject of the fall of the staircase at the Polytechnic.

A discussion lately took place in the House of Commons, which seems to us to merit far more attention than it has received from our daily journals. It arose with respect to the measures about to be adopted for the internal improvement of India, and especially with reference to facilitating the supplies of cotton to the European markets. Lord Stanley, on that occasion, stated that the present government had no intention of altering the system hitherto adopted for the execution of public works in our immense Empire of the East; and it might, indeed, almost be inferred from his observations, that vigorous measures were likely to be adopted to secure the development of the irrigation of that country. But Mr. Bright made one of his ordinary chance hits, wherein his strong common-sense led him to divine the truth, even though the premises from which he drew his conclusions were false, as Colonel Sykes subsequently proved. Mr. Bright said truly that the great obstacle to the growth of cotton in India, lied in the very unsatisfactory tenure of land which there prevails; and though of course a radical change in the manner of holding real property would be tantamount to a revolution, and must therefore be approached with fear and trembling, yet it is certain that until the land can be held on terms of as absolute possession as it is held in England, English capital will not be largely invested in the growth of cotton, or in any other agricultural operation in India, which would identify English settlers or colonists with the country itself. What is most required in our Eastern Empire is the creation of a permanent interest amongst the energetic conquering race in the prosperity of the native labouring classes, and the introduction of our social organization in the details of property, for the purpose of conferring upon it the security without which no nation can be long peaceful or happy. Nothing would contribute so much to secure this desired end than a system of colonization; and this cannot be effected, so long as landed property cannot be held as freely and entirely, throughout the length and breadth of that Empire, as it is at home. Irrigation and water-works may remove local evils, and so they deservedly should be continued; but they are only partial remedies for an existing defective state of social organization.

We hear, without however being able to obtain any details, that the Artesian boring lately undertaken at Ostend has been successful, and that a very copious supply of water has been obtained from a depth of about 134 feet. This result differs in so very extraordinary a manner from the results obtained at Highgate and at Harwich, though it appears to agree with the one which was obtained at Walton-on-the-Naze, that we invite the attention of our friends and correspondents to the subject; begging them to favour us with any information they may obtain with respect to it. A very interesting work of this description is now also going on at Hastings, where a boring is being made for the supply of the Local Board. It has been carried to a total depth of 302 feet from the surface, and is now traversing some of the white sands of the Wealden series, without however yielding, it appears, more than 35,000 gallons a day. This Hastings well is not yet completed, and we have been kindly promised to be furnished with further particulars concerning it. There are few places in England where an experiment of this kind would be attended with so much interest as at Hastings, and therefore we shall watch its progress with great anxiety. From all that we know of this district, we suspect that a copious supply of water cannot be expected to be obtained from a depth of much less than 1000 feet—even if obtained at all. Artesian borings are always problematical in their results; and in the Wealden formation we think the uncertainty will be found to be greater than usual.

ON THE EXISTING RELATIONS OF THE GAS COMPANIES AND OF THEIR WORKMEN.

The threatened strike of the stokers of some of the Metropolitan Gas Companies, and the very decided position assumed by the "Loyal Stokers' Protection Society" towards their employers, justifies us in alluding somewhat openly to the ever-vexed question of the relations between employer and employed, which after all are at the bottom of the movements specifically known by the name of "strikes." We allude to the subject with perhaps more freedom, from the fact that the convictions at which we have arrived are diametrically opposed to those which personal interest might be supposed to inspire. But as we are painfully aware of the great uncertainty which overshadows all discussions connected with the great industrial interests concerned, we beg at once to state that the opinions we may now express are simply those which represent the personal convictions to which we have been led by our own experience of the past. Emphatically, in all questions of the nature of the one we are about to discuss, it is impossible to lay down any abstract or invariable rule. "Circumstances alter cases" in many things: in none more than in those wherein human passions are brought directly into play; and therefore it is that we protest, before entering upon the following discussion, against the inference that we seek in any way "to precise" the duties of either of the parties to the issue which may shortly be raised.

The fact is, that in sober truth we believe that both employers and employed have too often forgotten, hitherto, the great moral law, that we are not sent into the world for ourselves alone; and they both of them forget too much that the assertion on either side of a *right*, by an inevitable necessity implies the fulfilment of a *duty*. In saying this, we know full well that we incur the risk of offending both parties, and that both masters and workmen will select from such doctrines those which may suit their own purposes. The course of a public monitor is, however, clear; and he must tell truth even when it may be disagreeable. So, therefore, we hold that it is our duty to recall the above primary law to the attention of the various parties to the dispute which seems likely to break out amongst some parties connected with the Gas-making interest; and we think that the remarks we are about to make in conformity with this law may usefully be applied by both parties concerned.

Have the employers (*i. e.*, have the Gas Companies) done their duty to the workmen they employ? and, primarily, what are those duties? Then, have the workmen any just reason for complaining of the neglect of their rights? and, secondarily, what are those rights? In other words—Is there any reason for the present ill-feeling which seems to be so widely spread amongst the London Stokers? or is the struggle which is "looming in the future" only a struggle for the £ *s. d.* accessible to the ringleaders of the movement? These are grave questions, as they may affect other interests than the one immediately before us; and it is because we look upon the movement which causes the "Loyal Stokers" to combine against their employers as being the faithful indication of some of the tendencies of the age in such matters, whether for good or for evil, that we earnestly invite both parties to the dispute calmly and dispassionately to examine the real grounds for the positions they seek to assume.

Now we hold that the duties of an employer (especially when that employer has rather a collective than an individual existence, and so is not able to influence those around him by his own personal example) are not confined simply to "giving a fair day's wage for a fair day's work." Such is unquestionably the basis of all relations between master and workman; but as it is written—not to speak it profanely—that "man shall not live by bread alone," so do we hold that even when good wages are paid, it is possible that the duties of employers may be performed in such a spirit as to degrade the persons they employ. It is notorious, for instance, that there are establishments in London which pay fair wages to their

workmen, but which entirely neglect the moral and religious education of their servants; and which treat the relations between themselves and their men solely with reference to the pecuniary interests of the parties concerned. The men employed by those establishments come to their work in the morning, they labour all day, and they leave at night, without any more heed being paid to their feelings as men and reasoning beings, than if they had been so many machines. Nothing is done to raise them in their own estimation, or to encourage those habits of order and of cleanliness which the very pursuit itself is so apt to efface; for it is notorious that the tendency of labour in a retort-house is to develop habits of intemperance, and a neglect of self respect, as displayed, at least, in personal cleanliness. It naturally follows that the workmen in such establishments have no interest in common with their employers; and they look upon the question of wages as being simply one in which either party is entitled to take whatsoever advantage he can of the other party to the bargain. The relation between masters and workmen thus subsides into a pure struggle of selfishness; and as such, it must be attended with all the heart-burning and bitterness of class disputes. The Gas Companies which act upon this narrow view of their duties are served by a species of eye-servants, at far too many times ready to rob their employers, or to advance their own interests "*per fas et nefas*," at the expense of those employers; whilst they are almost invariably irregular in their conduct, and disgusting in their personal habits. On the other hand, we are proud to say that there are Gas Companies which recognize that whilst they have a right to exact "a fair day's work for a fair day's wage," they also are bound to guide and instruct their workmen, so far as that course may be followed without interfering with the individual liberty of the latter; and they therefore as wisely, as kindly, provide the means whereby their men may, if they think fit, raise themselves in the scale of their own fellow-labourers.

It has been said that workmen do not appreciate the efforts thus made for their improvement; and that because the various Mechanics' Institutions, Reading Clubs, and Lecture Rooms have hitherto not been efficiently supported by the working classes, therefore the attempt to improve those classes systematically should be abandoned in despair. Now, it has always appeared to us that the failure of the Institutions we have above cited has arisen mainly from the cause which, in another form, characterizes the conduct of the employers who do nothing for their men beyond paying their wages—viz., from a want of real sympathy with the feelings of the workmen. The masters have been willing to do something for the men, but it must be in the way and at the times which they, the masters, think fit; and therefore the attendance of the men has been carelessly and indifferently yielded. Besides this, it seems to have been forgotten that the experiments which have been made for the purpose of raising the workmen—in this particular case, the stokers—have been made upon men whose habits and tone of thought have been already formed. Such men are too old to change rapidly; perhaps too old to change at all. At any rate, no measures for the improvement of working men can succeed unless they be inspired by a deep, earnest desire for their good, nor unless they be conducted in a spirit and in a manner to win both head and heart of the very acute class of men who constitute the class of skilled artisans in our large towns. Our own impression with respect to the reputed failure of the attempts to improve the labourers in Gas-Works is simply that those attempts have been misdirected; the duty of the proprietors of Gas-Works to watch over the morals and conduct of their workmen, and to advance them gradually in the scale of intellectual beings, remains just what it was, and it is, we hold, in no wise affected by the bad success of the first efforts to solve so great a problem; even supposing it to be true, which we are far from admitting, that the past efforts to improve the working classes have been failures.

But if the Gas Companies be thus morally bound to watch over the best interests of their workmen, those workmen are equally bound to study the interests of their employers, and to prevent the waste of property, the countless sources of loss, which come under the control of even the humblest labourer in any large concern. There must be a permanent identification of interests between the two parties; and this must, on the side of the workmen, display itself precisely in the discharge of duties which do not form part of any written or expressed law. There is, indeed, a greater moral obligation on the part of the men to study the interests of their employers in every detail of the occupations entrusted to them, than there is on the part of the masters to watch over the more abstract moral and intellectual interests of their men; for the mere fact of undertaking to perform a certain description of work implies that the party so undertaking it will employ conscientiously his best energies and abilities upon the work before him. If, then, working men combine to secure the enforcement of their rights, they should also combine to secure the fulfilment of their duties; and they should strenuously oppose the waste, the petty robberies, and even the carelessness of which too many of their class are guilty. It is to be feared that the high tone of morals thus advocated is not often put in practice; but until it is so, all parties may be assured that it will be in vain to delude themselves with the belief that "there is peace where there is no peace." In the mere struggle of selfish interests the workman almost always is the loser, because he has rarely the intellect or the capital requisite for conducting such contentions to a successful issue; and unfortunately, from the mere fact of the previously neglected state of the education of the working classes, they are notoriously exposed to be misguided by a mischievous body of noisy, unprincipled intriguers, who live by extorting money from their hard-working but mistaken associates. If working men would but reflect on what is passing around them every day, they would find that the most prominent leaders in the associations for protecting the so-called interests of their class are usually the worst, most careless, and most wasteful men, so far as their employers are concerned; and most earnestly do we then urge any body of artisans about to enter upon a course which eventually must place them in direct antagonism with their masters, to examine conscientiously whether they themselves have fulfilled, not the letter only, but the spirit of the law which must regulate ultimately the whole of the relations of a well-organized society. That law is, in fact, to do to others as we would be done by. Masters and men alike must observe it, if they desire to enjoy permanent happiness, or even continued worldly success; and both masters and men may be sure that in any dispute wherein the public opinion of their fellow-citizens may be appealed to, the first inquiry will be whether the respective parties have fulfilled the duties of their positions.

We cannot conclude these remarks, preliminary, we fear, to many others of the same description, without an earnest appeal to the directors of the large gas-works to organize some effectual means for improving the moral condition of their men. A very small outlay would ensure the facilities required for personal cleanliness and for comparative comfort during working hours. It could not cost much to establish a general eating and sitting room, with lockers for each permanently employed workman, and with the necessary washing and dressing closets attached. There may seem to be a degree of pedantry, and, so to speak, coquetry, in our ideas on this subject, but we suspect strongly that the stokers who are the most anxious to appear clean and respectably dressed out of doors, will be found to be the best workmen and the best servants; and that the outlay which may be incurred to enable them to indulge this whim, if it be so called, will be amply repaid by the character of the service rendered. But the duties of employers do not stop here; and the homes, the tastes, education, and habits of their workmen, and of their workmen's wives, ought to occupy the attention of those whose interests are so strangely interwoven with the discharge of their social duties. Great tact, much patience, and heartfelt sympathy, are required for the discharge of the obligations which we thus consider to link together the various classes of society; but there seems to us to be no security for the permanence of any country in which those obligations are not seriously examined and earnestly fulfilled. It is still within the power of the Gas Companies, which have not addressed themselves to the discharge of these, which we should rather style their moral and social duties than their strictly commercial and legal ones, to render harmless the intrigues of the demagogues who are likely to take the lead in such movements as those said to be contemplated by the Loyal Stokers' Protection Society. All that is required is to prove to the working men that the interests of masters and men are felt to be identical. Of late years much has been done towards securing this great end; much still remains to be done, which violence and passion on either side will but delay. The good sense of our workmen, and the good feeling of the more wealthy classes of our society, will, however, we are convinced, protect us from the sad follies which the class disputes we have referred

to have produced in other countries; so that, although we watch with anxiety the movement actually going on amongst the stokers, we have no fear of its ultimate results. If it only cause the Directors of Gas Companies to think of all the responsibilities of their position, it will effect great good, and thus directly advance the interests of all parties concerned.

"It's coming yet, for a' that,
That man to man, the warld o'er,
Shall brothers be for a' that!"

Circular to Gas Companies.

The managers of the metropolitan gas inquiry are very industrious in their vocation, and are actively preparing evidence to present to Parliament, with a view to prove that their alleged grievances are not altogether imaginary, and that they are really suffering from the monopoly and extortion of the gas companies. They have sent circulars to the town-clerks of the principal towns and cities in Great Britain and Ireland, soliciting information as to the supply of gas in their respective localities, and the replies to those inquiries, so far as they are considered to suit the purpose of the managers, they have printed for circulation, and we have given them the publicity of insertion in another part of our Journal, together with the "conclusions" which they draw from that information, and "from other facts which have come to the knowledge of the managers."

We may fairly presume that the statements they have printed are those that tend most strongly to support the case of the metropolitan gas agitators, and that of all the towns and cities in Great Britain and Ireland the twenty-two selected for illustration are among those which enjoy an enviable supply of gas. For the purpose of presenting this collected information in a more comprehensive view, we have placed the chief points in a tabular form, with some additions which from our own knowledge of the facts we have been enabled to supply, to render the information more complete. We have purposely omitted from the table the towns in Scotland, which being lighted with cannel gas their cases do not apply to the metropolitan gas companies.

	Average Price of Coals per Ton.	Public Lights.						Private.	
		Number of Hours per Annum.	*Consumption per Hour.*	*Gross Price per Lamp.*	*Net Price per Lamp, after deducting 13s. for Lighting.*	*Price of Gas per 1000 Feet, including Lighting.*	*Price per 1000 Feet for Gas only.*	*Maximum Price per 1000 Feet.*	*Minimum Price per 1000 Feet.*
			Feet.	£ s. d.	£ s. d.	s. d.	s. d.	s. d.	s. d.
Lincoln	....	1800	5	3 3 0	2 10 0	7 0	5 6½	....	....
Norwich	About 16s.	About 4000	5	3 18 6 4 8 6*	3 5 6 3 15 6	3 11 4 5	3 3½ 3 9	4 6	4 6
Preston	About 14s.	About 3000	4	....	....	....	3 4½	4 3½	3 4½
Cambridge	About 15s.	About 4000	4½	4 0 0	3 7 0	4 5½	3 8½	5 6†	5 6
Cheltenham	About 14s.6d.	....	....	....	....	....	4 0	5 0	5 0
Lancaster	....	2520	4	....	....	3 10½	....	5 6	5 6
Coventry	About 15s.	3100	5	2 10 0	1 17 0	3 2½	2 4½	4 6	4 6
Stamford	....	....	4½	2 13 0	....	....	....	5 6	5 6
Northampton	....	....	....	....	....	5 11‡	5 0	5 0	5 0
Bristol	About 10s.	About 3800	5	4 0 0	3 7 0	4 2¾	3 6	4 0	3 9
Carlisle	10s.	About 3800	....	2 13 0	....	....	....	4 2	4 2
Dublin	About 17s.	....	....	....	....	....	....	4 9	4 9
Macclesfield	....	2400	4	1 19 0	1 6 0	4 0	2 9	....	3 9
Belfast	About 13s.	....	4	2 5 0	....	....	....	4 2	....
Rochdale	About 10s.	2351	3·7	....	....	....	3 6¾	4 0	3 3
Walsall	10s. 6d.	....	....	3 0 0	....	....	....	4 8 3 4§	4 8 2 10
Bradford	About 7s.6d.	....	4	2 8 0	....	....	....	4 0	4 0
Sunderland	About 5s.	....	....	2 16 3	....	....	....	4 0	3 0

It will be observed that ten out of the eighteen towns mentioned in the above table are situated in or near to coal and iron districts, consequently are under circumstances favourable to the cheap manufacture and distribution of gas. Nevertheless, it appears that the average maximum price paid by private consumers in these eighteen towns is 4s. 6¾d. per 1000 cubic feet, and the minimum, when discounts are allowed for large supplies, is 4s. 4½d., while the average price of coal in the same towns is 12s. 2d. per ton, and the price at the London Gas-Works is about 16s. per ton. It seems, therefore, from this evidence, so assiduously collected, and no doubt carefully selected, that the London gas companies, though paying a much higher price for coals, for iron, and for labour, supply their customers at a cheaper rate than is charged to the great body of consumers in the favoured districts chosen by the managers of the metropolitan gas inquiry to illustrate their grievances.

This brief exposition of the true bearing of the facts collected by the managers is sufficient to show that the firing off of this great gun, as they evidently consider their circular, has damaged themselves instead of those against whom it was directed; and we might thus let the matter rest. But there are some points that require further explanation, and we cannot allow the strange conclusions at which they have arrived, from such adverse premises, to pass unnoticed. The first of these conclusions—in direct opposition to the published facts—is, "that the prices at present charged by the London gas companies to private consumers are excessive." The other conclusions at which these sapient logicians have arrived are, shortly, that the public lights ought to be supplied at a cheaper rate than private consumers, that the companies give short measure to the public lamps, and that gas-works when in the hands of corporations are better managed and with greater advantage to the public than when conducted by companies. With respect to the first of these conclusions, the managers themselves have taken much pains to show that it is false, and that so far from the London prices being excessive, they are lower for a better quality of gas than the average prices of the towns selected for comparison, though all the materials of manufacture and labour are in London more costly.

The conclusions regarding the price of the public lights, if not directly opposed to fact, are, at the best, misrepresentations of the truth. It will, indeed, be seen on examination of the figures in the table given above, that the price per 1000 feet of gas is in every instance but one lower than the price charged to private consumers, but it is well known that companies have in many instances been induced to light the public lamps at unremunerating prices as a consideration to the local authorities for permission to lay down mains, or to abstain from opposing the companies' bills before Parliament. In the majority of such cases, however, the gain to the public has been a loss to private consumers. It must be admitted, that there are advantages attending a large public supply which justify the requirement of a discount on the price charged to small consumers, but the managers have not stopped to examine their own returns to ascertain whether or not their model towns are in this respect better off than London. Notwithstanding the public lamps of some of those towns are lighted without remuneration, and even at a loss, yet when we take the aggregate it will be perceived that the average price charged per 1000 feet of gas consumed is fully equal to the price obtained by the much-abused London gas companies.

The conclusions drawn respecting the management of gas-works by corporations are as little borne out by the premises as the other conclusions at which the managers have arrived. It is an established fact that, where the cases admit of comparison, companies supply the public on better terms than corporations, who find it convenient to obtain money from the gas-consuming portion of the inhabitants instead of levying taxes on the whole. The selection of a case to prove the advantage of corporation management is curiously infelicitous. Walsall is held up as an example worthy of imitation, but the antecedents and the present condition of the gas supply of that town should serve rather as a warning. The price of gas in Walsall was, until very recently, 4s. 8d. per 1000 feet, whilst all

* Price required by the gas company for the new contract.
† Since reduced to 5s. per 1000 feet.
‡ Settled by arbitration, both for public and private lights.
§ The reduced price has been recently announced, in consequence of a threatened opposition.

the surrounding districts had for a long time been lighted by the Birmingham and Staffordshire Gas Company at a charge of 4s. per 1000. Such were the benefits derived by the inhabitants of Walsall from corporation management of the gas-works until, frightened by the threatened opposition of the Staffordshire Company, the corporation reduced the price at Michaelmas last to 3s. 4d. for the purpose of preventing interference with their monopoly. When the danger is passed there can be little doubt that the price will be again raised. The manœuvre of reducing the price below the remunerating point to keep a rival from the field is sometimes practised by a gas company in possession, but the adoption of such an expedient is a desperate recourse, which few but the managers of the metropolitan gas inquiry would adduce as a specimen of excellent management. Rochdale and Carlisle are the only other towns mentioned in which the gas-works are managed by corporations. In both those places the price of coal is only 10s. per ton, and the charge for gas is 4s. and 4s. 2d. respectively. Those instances, therefore, are not calculated to raise the estimate of the advantages to be derived from such management; and if the seers appointed by the delegates from the metropolitan parishes were to extend their views beyond the limits of their circular, they would be inclined to arrive at very different conclusions from those they have printed. Liverpool and Manchester present examples really worth noting of the operation of the two systems. The coal is obtained for both from the same place, which is about an equal distance from each, and the number of inhabitants in the two towns is nearly equal. In the former the gas supply is provided by a company, who divide 10 per cent. among their shareholders; and in the latter the corporation supplies the gas, and appropriates the profits to make good the deficiency in the water-rate. The effect of the two systems upon the consumers is, that in Liverpool they pay 3s. 9d. per 1000 feet for gas, while the price in Manchester is 5s. to the great body of consumers; and if any information is required as to the relative quality of the two gases, it may be found in the evidence given by Mr. J. T. Cooper, in 1851, before the select committee on the Metropolitan Water Supply. We need not here refer to the gas-meter question which has been agitating that city further than to say the conduct of the corporation in that matter has not tended to inspire confidence in the management of gas-works by municipal bodies.

There are several other parts of the circular which the managers of the metropolitan gas inquiry have fulminated that challenge notice and contradiction; but we have already said enough to expose the fallacy of the conclusions drawn from the evidence they have so busily collected. If they proceed with equal activity, they may succeed before the parliamentary committee resumes its investigations in completing the proof, they have already so far advanced, of the utter groundlessness of their complaints against the London gas companies.

The meter question in Manchester slowly drags its length along, without approaching a conclusion. At the quarterly meeting of the council held on the 2nd instant there was a wordy warfare of upwards of two hours' duration without any substantial progress being made, but rather retrogression. The dissensions in the gas committee itself have been more fully exposed by a division on the question of Mr. Cleminshaw's resignation. That gentleman had offered to withdraw his tendered resignation if he were allowed an absence of six weeks to regain his strength, receiving half his salary during that period. This proposition was met by an amendment to the effect that his resignation should be at once accepted, on which question the votes in the committee were equal, the numbers being five on each side; but amongst those who voted against him was a gentleman who is understood to be a candidate for the office when vacant. The chairman gave his casting vote in favour of Mr. Cleminshaw, therefore he will for the present remain nominally manager of the gas-works, though the feeble state of his health, it is expected, will keep him from active interference in affairs until the meter question be settled, or the agitation has subsided. Two reports were presented at the meeting of further experiments with Messrs. Parkinson's, with Mr. Wright's, and with Messrs. Crosley and Goldsmith's meters, which confirmed the previous allegations that the meters employed by the corporation might register to a large extent against the consumer with the lights burning steadily, whilst they would not register more than 6 per cent. against the corporation. Some further correspondence with Mr. Taunton was also read, showing still more clearly the necessity of a thorough examination of the points in dispute by competent and impartial judges; but the question has been rendered more complicated, and its settlement more remote, by Mr. Lowe's refusal, on the ground of ill health, to undertake the meter examination in conjunction with Mr. Hawksley, and no other person has yet been appointed in his stead. Every day shows more imperatively the necessity of a searching inquiry into the subject, but it seems now to be as far off as ever.

We have inserted elsewhere a translation of the regulations prescribed by the municipality of Marseilles for the supply of gas to that town. These regulations will be read with interest, as showing the conditions thought necessary for the protection of the public by a paternal administration, and some useful hints may be gained from them by gas companies as well as by consumers. These conditions refer to the quality and pressure of the gas, to the mode of supply, to the testing of meters and the rents to be paid for them, to the laying down of mains and service-pipes, to the turning on of the gas, to the precautions to be observed in the burning, and to almost every contingency that may be supposed to arise in the supply and consumption of gas. It will be observed that the municipal authorities of Marseilles are much less exacting in the amount of pressure required for the public service than the delegates of the London parishes think it necessary to enforce, all that they require being sufficient pressure to supply the burners after passing through the meters. The administration take full control over the measuring instruments, for not one is allowed to be placed without their permission; but they give consumers the privilege of selecting the kind of meter they prefer, provided it be such as to meet the approval of the municipal authorities. The supply of gas to all persons requiring it, within the range of the company's mains, is rendered compulsory on the condition that they pay for one month's supply in advance. The regulations for the prevention of accidents deserve consideration, especially the requirement of ventilation in places where there is danger from escape of gas.

The case recently tried before the Greenwich Police Court, *Badger v. Crystal Palace District Gas Company*, must interest all parties connected with this description of property. The question substantially raised was, whether the incorporation of the clauses, numbered from 54 to 63 of the Act 8 and 9 Vic., c. 84, and the Act 9 and 10 Vic., c. 5, by means of the clause 109 of 18 and 19 Vic., c. 122, protected Gas-Works from useless interference on the part of parochial authorities; and the observations of both Council and Magistrate prove the difficulty which exists in the interpretation of the modern Acts of Parliament. We have often protested against the system of incorporating, by reference only, portions of former Acts into new ones; and precisely in this case the whole gist of the argument turns upon what can have been the intention of the Legislature in using a very vague phrase for such a purpose. The Court of Queen's Bench will be appealed to with the hope that it may furnish a satisfactory gloss upon the Metropolitan Buildings Act, and therefore we may for the present abstain from any arguments with respect to the pettifogging restriction Mr. Traill seems disposed to place on the meaning of its 109th clause. But there was an incidental remark made by Mr. Bodkin, to which we would call attention, on account of its general bearings on other cases than the one before us. That gentleman contended, in fact, that a Gasholder was an implement of trade, and we think that he implied that it was not a *building*. Now, it is odd that there is no legal definition of what constitutes a Building in any of the recent Acts upon this subject; and it is characteristic of recent legislation that the word is used, especially in the Act 18 and 19 Vic., c. 122, in a very incorrect sense, at least according to its derivation. Of late years, *a Building* has been taken to be an equivalent phrase to *a construction;* but really it originally meant only the material binding together the other materials of a construction. The terms of clause 63 of 7 and 8 Vic., c. 84, do not, it is true, mention the word "Building" at all, nor did Mr. Bodkin distinctly raise the point we allude to; still the manner in which the allusion to the tanks being simply "implements of trade" was made, suggests the inquiry as to what they really are; and thus we are led to inquire into the meaning of other parts of the Act under which the Crystal Palace District Gas Company is prosecuted. In these days, when words are things, it is important that their meanings should be clearly defined; and certainly if the original meaning of the word *building* be adhered to, a Gas-Tank cannot be

considered to be anything else than an implement of trade, and as such it is, we think, exempt from the provisions of the Clause 55 of 7 and 8 Vic., c. 84. The word *building*, in fact, is simply the modern form of the present participle of the Saxon verb "*byldan*," to bind or tie together.

Mr. Pickering, Q.C., the arbitrator to whom the appeal of the Wakefield Gas Company against a large increase in their assessment was referred from the Yorkshire West Riding Sessions, has made an award by which the ratable value is reduced from £2845, at which sum it was fixed by the overseers, to £1994, being an excess of £722 above the old valuation. Each party is to pay his own costs, which amount to a large sum, as the arbitrator sat for eleven days. The report of the proceedings is too lengthy to allow of its publication in the present, but it will be given in an early number.

Communicated Articles.

REGULATIONS FOR THE SUPPLY OF GAS AT MARSEILLES.

The municipal authorities of Marseilles have adopted the following regulations for the supply of gas to the public lights and to private consumers in that city, and, although they are to a certain extent based upon the regulations adopted for the supply of gas in Paris, they include several new and important conditions possessing considerable public interest at the present moment, when the system adopted in this country is under consideration:—

1. During the burning of the public lights, and during the whole day in those quarters of the city where the state of the mains and the number of consumers will permit it, the gas must be maintained at such a pressure as to be delivered at the burners in sufficient quantity even when it has to pass through a meter.

2. The gas must be made from coal and be completely purified, according to the processes adopted by the gas company of Paris; and its illuminating power must be such that under ordinary pressure the burners of the public lamps shall give light of the following intensities:—

   1. When burning 100 litres (3·53 feet) an hour, it shall give a light equal to 77 per cent. that of a Carcel lamp burning 42 grammes of oil per hour.
   2. When burning 140 litres (4·94 feet) an hour, it shall give a light equal to 1 and a 10th that of a Carcel lamp burning 42 grammes of oil per hour.
   3. When burning 200 litres (7·06 feet) an hour, it shall give a light equal to 1·72 times that of a Carcel lamp burning 42 grammes of oil per hour.

3. To enable the administration to ascertain that these two essential conditions are fulfilled, rooms shall be provided for testing the gas in the *Hôtel de Ville*, and in all other parts of the town where the administration may think proper, where daily experiments shall be made by pressure-gauges, gas-meters, standard burners, photometers, and other requisite instruments. A statement of the results of these experiments must be sent to the authorities at the end of every week.

4. The company who undertake to light the town shall be bound to supply gas to every person who shall have entered into an agreement to that effect, for three months at least, and who shall also have conformed to the subjoined regulations respecting the placing of the requisite apparatus. The agreements entered into with the consumers shall be according to a form approved by the authorities. No consumer shall be refused a supply of gas where mains have been laid down; but the company may demand payment for a month's supply in advance, at the residence of the consumer.

5. The gas shall be supplied either by meter, or at the burner at a charge per hour, according to the wish of the consumers. The agreements for a supply direct to the burners must be for every day in the year, without exception. The company shall, at the request of any consumer who may desire it, change the condition of supply by the burner to a supply by meter.

6. The price of the gas supplied by meter is fixed at 33 centimes per cubic mètre (about 7s. 6d. per 1000 feet). The price when burned by the hour, or for a time between the hours of service mentioned in the first article, shall be agreed between the company and the consumers.

7. The meters must be provided at the cost of the consumers, who may have them fixed by any makers they choose, saving the rights of patentees. The meters must be fixed in places where the servants of the company can have free access. The meters used must be approved by the administration, and a model of each different kind of meter, when approved of, shall be deposited at the *Hôtel de Ville*.

8. The meters must not be used until they have been tested and stamped by the authorities. They must be submitted to all the tests the authorities may deem necessary, to ascertain their correctness and the regularity of their working, without prejudice to those testings that the company or consumers may think fit to adopt. In all testings of the meters 1 per cent. of variation shall be allowed; that is, a meter will be considered correct when its registration does not differ from the actual volume of gas passed more than one-hundredth part, whether more or less. It must also work without losing more than two millimètres and a half (one-tenth of an inch) of pressure. To facilitate the testing, special apparatus will be provided in the testing-room at the *Hôtel de Ville*.

9. The manufacturer or supplier of the meter must pay for the first testing and for the stamping 15 centimes (1½d.) per burner, as fees and for the charge of removing the testing apparatus. In subsequent testings 25 centimes (2½d.) per burner will be charged; but the whole sum to be paid per meter shall not be less than 2 francs (1s. 8d.), nor more than 60 (£2 8s.). These subsequent testings must always be made in the presence of the parties, and the costs shall be paid by the owner of the meter when the testing has been at his request; and by the party fined if the testing has not been made at the request of the owner. When the testing has been ordered by the municipal authority, without any request from the parties interested, no fees or expenses shall be paid unless the meter be found incorrect. In that case, the owner of the meter must pay the cost.

10. The company shall be bound to let meters for hire, of their own selection, taken from those approved by the administration. The rent per month, according to the following table, shall be payable at the same time as the gas.

Size of the Meter.	Monthly rent payable.
3 burners	1 fr. 25 cent.
5 „	1 50
10 „	1 75
20 „	2 25
30 „	2 75
50 „	3 50
60 „	5 0
80 „	6 0
100 „	7 0
150 „	9 0
200 „	12 0
300 „	16 0

In consideration of the payment of these rents, the company shall be at the charge of fixing the meters, and of their maintenance and repair; without, however, being responsible for the effects of frost.

11. The consumers by meter may burn the gas as they like, inside or outside of their houses; but in case the number of burners should be increased beyond the capacity of the meter, they shall not have any claim for redress from the company on the ground of the want of a proper supply of gas.

12. Every person applying to be allowed a new kind of meter must state in his application whether or no the plan is patented; if it is already in use in other towns; the sizes and the prices for different deliveries of gas; and the places where the meters will be used, and where they may be examined. A model of the meters, so constructed as to be examined inside, is to accompany the applications.

13. No place shall be lighted with gas without the authority of the administration. Every one, therefore, who wishes to have gas laid on must first make a declaration to that effect, stating the name and residence of the gas-fitter.

14. The requisite authority will not be given until an inspection has been made to ascertain if the service-pipes and other apparatus are fixed according to the prescribed regulations, and that there be no leakage of gas, according to the directions of article 25, subjoined.

15. The company shall not supply gas until they have had presented to them the authority required by article 13.

16. No main-cock of a service-pipe shall be placed under a public thoroughfare without special authority. The main-cocks shall always be placed in the basements of houses or shops, or in the walls, as close to the ground as possible.

17. The outer main-cock must be enclosed within a box, and be so arranged that any leakage of gas cannot pass from it into the parts that are lighted, but must escape into the open air. This box must have a metal door, the key of which must be in the charge of the company. The consumer is expressly forbidden to touch the door of the box or the apparatus within it, which must be exclusively managed by the servants of the gas company.

18. In case the lighting of a district be suspended, the door of the box shall be covered over with a metal plate fixed by screws, so as to prevent the servants of the company from opening it.

19. The outer main-cock shall have an apparatus so arranged, or constructed in such a manner, that the consumer cannot turn it to supply himself with gas without the company's assistance. A servant of the company must open the main-cock when the lighting should commence, and close it when the lighting should cease.

20. Two keys of the main-cocks and of the doors must be deposited at the *Hôtel de Ville*, at the office of the commissaries of police, and at the fire-engine stations.

21. The interior distributing-pipes and other apparatus must be exposed to view along their whole course. Whenever a tube passes in any manner across a wall, a wooden partition, a wainscoat, or any vacant space, it must be carried throughout its whole length in a pipe exposed at both ends, or at least at its highest end. This pipe must be of metal, and where needful it must be carefully soldered. It must project at least one centimètre from

the surface of the walls or partitions into which it may be let in. Its internal diameter must be at least one centimètre greater than the outside diameter of the tube enclosed within it.

22. The handles of all the stop-cocks must be so fixed that they cannot be taken off, even by a violent effort.

23. The distributing-pipes leading to the burners must be made of drawn or wrought-iron tubes, of cast-iron, or of tin, lead, or copper, and must be perfectly air-tight.

24. Ware-rooms (that is to say, closed rooms for the display of goods) in which there are gas-fittings must be always well ventilated.

25. No person must attempt to detect a leakage of gas by a flame, excepting in places exposed to the air or well ventilated.

26. As soon as the company shall hear of an accident, they must immediately send one of their servants to the spot.

27. The present regulations are applicable to removals, repairs, alterations, or additions of premises in which the gas-pipes or apparatus are interfered with.

28. The company are bound to make connexions from the main under the street to the main-cock outside the basement of the consumers' houses by a cast-iron or lead pipe. The company shall also provide and fix the main-cock and the box, as described in article 17. The size of the service-pipe and of the main-cock must be sufficient to allow the gas to pass without sensible diminution of pressure from the main to the exit from the cock, even when the delivery of gas shall be equal to the maximum quantity specified in the police agreement. The other pipes, exterior as well as interior, attached to the main-cock, shall be fixed at the cost of the consumer.

29. The laying-on of the service-pipe, comprising all the materials and workmanship, must be done by the company according to the following prices, to be paid by the consumer before the commencement of the work:—

For a supply of from	1	to	3	burners	..	60 fr.
„ „	4	„	5	„	..	65
„ „	6	„	20	„	..	75
„ „	21	„	50	„	..	100
„ „	51	„	100	„	..	120

For a supply exceeding 100 burners, the price of the laying on of the service-pipes must be arranged between the company and the consumer; and in case they cannot agree, it must be settled by reference. The company will continue to be the owners of the pipes, which they must maintain at their own cost. The company will also be the owners of the main-cock; and for keeping it in order and changing it when necessary they shall receive 50 centimes (5d.) per month. The main-cock must be oiled twice in each month. In case the service-pipe should be cut or injured by workmen not in the employ of the company, the repair must be made at the cost of the consumer.

30. At the expiration of the consumer's agreement the pipes laid down by the company shall not be taken away unless a new agreement be not entered into in the course of three months, either with the former consumer or a new tenant, or with the owner of the house himself. The authorities, nevertheless, reserve to themselves the right of suspending this order when the claims of a third party appear to be established.

31. The meters belonging to individuals and actually in use may continue to be employed, without having the stamp of the authorities, and though of a kind not approved by it; but this privilege shall cease when the company, who have the concession of the public lights, shall require it, and when the municipal administration shall give an order to that effect.

32. A delay of six months is granted to the customers of the old gas companies to procure the authorization required by article 13, and to make the requisite preliminary testings.

33. The orders contained in article 21 shall be carried into effect in the distributions of gas actually existing only as regards alterations, additions, or repairs which affect those arrangements.

34. The consumers shall be personally responsible for carrying into effect the present regulations as regards the interior fittings.

35. The infringements of these regulations may be proved by verbal evidence or by reports transmitted to the authorities, to be submitted to competent tribunals, without prejudice to the measures of administrative police, to which they must give place, especially the cutting off of particular pipes, which, in such cases, must not be renewed without the permission of the authorities.

36. The present regulations shall be printed and posted up as well as the annexed instructions, which must always be printed at the bottom of the agreements with consumers.

37. The engineer of bridges and highways, and the commissaries of police, are charged with the execution of the present regulations.

Hôtel de Ville, Marseilles, May 17, 1858.

INSTRUCTIONS TO GAS CONSUMERS, AND PRECAUTIONS REQUIRED TO BE TAKEN IN LIGHTING WITH GAS.

In order to prevent any inconvenience from lighting with gas, it is necessary that none of it should escape without being burned.

The places lighted should be carefully ventilated, even when the lights are extinguished; that is to say, apertures should be made in places above the burners by which the gas may find its way into the open air in case of leakage or of non-combustion. Without this precaution the gas not burned accumulates, and might occasion suffocation, explosions, and fires.

The stop-cocks should be thoroughly oiled from time to time, to make them work easily.

In lighting the gas, it is essential first to turn the stop-cock on the outside, of which the consumer has the key; then to hold the light to the orifices of each burner in succession, at the same time that the stop-cock belonging to the burner is opened, to prevent any gas from escaping before it is lighted.

When the gas is extinguished, it is necessary to begin by carefully turning the small stop-cocks of each burner, and afterwards the outer stop-cock, if it should not have been previously turned by the servants of the gas company. If these precautions be not observed serious accidents may occur, of which, unfortunately, there are numerous instances.

When the smell of gas indicates that some leakage must exist, it is necessary to open the doors or windows to produce a current of air, and to turn off the gas at the principal stop-cock. It is necessary also to inform both the gas-fitter and the company, so that the leakage may be immediately stopped.

The consumer should carefully avoid attempting to discover the place of leakage himself by applying a light. The workmen themselves should not try to discover the leakage by a flame, except under the circumstances noticed in the 25th article of the regulations.

In case, either imprudently or accidentally, a leakage of gas take fire, a wet cloth should be used to extinguish it.

When work is being done in the streets to the sewers, the paving, the causeways, or to the water-pipes, gas consumers before whose houses such works are being carried on should ascertain that no damage is done to the pipes that supply them with gas; and if it should be, they must give notice to the gas company and to the administration.

Correspondence.

SCURFING CLAY RETORTS.

SIR,—I see in answer to a country superintendent in the last JOURNAL respecting the carbonaceous incrustation on clay retorts, your advice is to burn it off. This is a tedious way, and in small works they often cannot spare a retort for several days, sometimes not even for hours, particularly if they had to send out 26,000 feet in the 24 hours, and had only gasholder room for 12,000 feet, as I have done. My plan for scurfing clay retorts is both simple and effective, and by it I can generally get carbon off 6 or 8 inches thick in from six to nine hours. As soon as I have drawn the coke from the retort to be scurfed, I cover the bottom all over with about 3 inches thick of ashes or breeze, and near the mouth I allow the ashes to reach within 3 inches of the top of the mouthpiece. I then take a 6 or 8-foot length of 1-inch tubing, with a bend on the end outside the retort, and having ready a waterpot filled with water, I pour in three or four pots of water. The steam from the boiling water will very soon loosen the carbon, so that it will drop off in pieces from a quarter to a half hundred weight, if on very thick. The ashes on the bottom will prevent the water touching, and so damaging, the retort. The only precaution required is, not to let the tube get hot before pouring in the water, otherwise the water will fly back, and probably scald the man's hands; but should the water return thus, then it will be only necessary to take the tube out, and lay it aside for half an hour or so, to cool, before trying it again. By repeating this operation you will get your retort perfectly clear by stopping only one charge. I have adopted this mode for about 14 years, and have had many inquiries as to how I managed to keep my retorts so clean.

WILLIAM MELLOR.

Gas-Works, Leighton Buzzard, Feb. 8, 1859.

Register of New Patents.

1703.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, London, civil engineer, for "*Improvements in gas-meters.*" A communication. Patent dated July 28, 1858.

This invention consists in so constructing a measuring-drum, which operates with an oscillating movement, that the water or other liquid which seals the measuring chambers, and also the valve by which the direction of the gas is changed from one chamber to the other, are contained within the drum itself.

The invention further consists in providing such drum with a weighted lever properly applied to operate the valves by the oscillation of the drum.

The drum is composed of two cylinders placed one within the other. The space between them forms the gas space, and is divided into two compartments by a small chamber which contains the valves. As the drum oscillates on its centre, gas is alternately filling one compartment and leaving the other. The valves are worked by means of a pendulum or weighted lever, which is suspended therefrom outside the drum.

The claim is for the construction of an oscillating drum in such manner as to contain within it the liquid by which the measuring chambers are sealed, and also the valve by which the direction of the gas is changed from one of the said chambers to the other, and with a weighted lever attached to operate the said valve by the oscillation of the drum.

1752.—HUGH GREAVES, of Westminster, London, civil engineer, for "*Improvements in constructing streets, roads, and ways, thereby facilitating traffic, and providing for the more convenient conveyance of sewerage,*

drainage, gas, and water supplies, and telegraphic wires along the same." Patent dated Aug. 2, 1858.

This invention consists in forming the foot pavement—the level of which may, as usual, be higher than that of the road—of open-work plates or girds of cast iron, supported in such a manner as to leave a space beneath, along which the pipes for conveying gas and water supplies may be conveniently laid, and which will receive the mud, &c., which may fall through the openings from the upper surface of the pavement.

The open-work plates or girds may be cast in chills, in order to give them increased hardness, and may be so formed as to admit of being turned over, in order that when one surface is worn smooth the other shall be brought into use. The kerb, which is also formed of cast iron, is constructed in the form of a hollow channel or pipe, having openings along its sides to admit the surface-water from the roadway and foot pavement, and communicating at short intervals with tanks sunk to a lower level, for the purpose of receiving the more solid matters which may be carried off with the water. The pipe or channel kerb may in some cases be formed with one edge-rail of a tramway attached thereto, the other rail of which may be laid in the roadway, and also formed as a pipe or channel, as above described.

By these arrangements the storm or surface-water may be kept comparatively pure, and conveyed as required apart from the sewerage of dwelling-houses, &c., which it is proposed to run into suitable tanks situated at intervals along the line of road or way, and from thence to pump it up into a pipe or pipes, supported on columns along the centre or side of the road, the pipe or pipes being made to carry a line or lines of railway (accessible at intervals by steps or otherwise from the street level), upon which carriages may travel for the purpose of relieving the road below from a portion of its traffic. The columns before named may also be made available for supporting other pipes for the conveyance of gas, water supplies, and telegraphic wires, or for the purpose of ordinary street lamps.

In some cases it may be considered desirable to make use of wrought iron in the construction of the pipes or tubes instead of cast iron, and otherwise to modify this and the other parts of the invention to suit the circumstances of particular cases.

The claims are—

1. The construction of footways or girds of cast iron, supported in such a manner as to leave a space beneath for the placing of pipes and other purposes, as above described.

2. The arrangement of hollow kerbs or channels, whereby the drainage of surface-water is carried off from the footpath and roadway, and the heavier matters collected in tanks as described.

3. The use for the conveyance of gas and water supplies of pipes or tubes so supported on columns, and carrying rails forming a way for the purpose of passenger or other traffic.

4. The general combination of parts in the construction of streets, roads, or ways, as described.

1755.—George Davies, of 1, Serle Street, Lincoln's Inn, London, and 28, Enoch Square, Glasgow, engineer and patent agent, for "*A process and apparatus for the extraction of oils for illuminating and lubricating purposes, and of carburetted hydrogen gas from the native bitumens of the West Indies.*" A communication. Provisional protection only obtained. Dated Aug. 3, 1858.

The apparatus to be employed for the above purpose is similar to that employed in the manufacture of coal gas, with the following exception. The tubes which carry the products of distillation from the retorts are formed with a curve or shoulder as near as possible to the head of the retort, and discharging by a gentle slope into the hydraulic main, which must consequently be placed a little lower than the heads of the retorts. This alteration is rendered necessary by the excessive weight of the vapours disengaged from the bitumen, and the small amount of latent heat contained therein. The hydraulic main should be slightly inclined, and discharge the liquid resulting from the operation and the uncondensed vapour into a column or vertical pipe of a diameter proportioned to the number of retorts employed. This column or condenser is to be furnished with an ajutage at the top, and constantly supplied with cold water.

The bottom of the ajutage is to be pierced with holes, so as to allow of the water descending in a shower into the interior of the condenser. This cold shower will condense the products of distillation and carry them to the bottom, where they will be received into a vessel, and the oil and water separating spontaneously are drawn off by taps placed at different heights.

At the top of this vessel is a tube which will carry off the uncondensible gases to the furnace to be burned, or these gases may be used for lighting purposes.

The oil is then washed once in sulphuric acid, and three or four times in pump water. The water of the last washing being removed as completely as possible, about 5 per cent. in weight of argil torrefied and sifted is thrown into the oil. The oil is then well agitated and allowed to settle, after which it is drawn off and redistilled in a refrigerating alembic by means of steam superheated to from 200° to 300° centigrade, commencing the distillation at the lower temperature and finishing it at the higher. The distillation is stopped when the oil indicates 65° on the alchometer. This first product is then separated, and forms quality No. 1, and serves for illuminating purposes. The distillation is then continued till the oil indicates only 37°. This latter product is quality No. 2, and serves for lubricating purposes. There will remain in the alembic about 10 per cent. of residue, which must be drawn off immediately by a cock fitted to the circurbit for that purpose. This residue will solidify if allowed to cool.

The crude oil prepared by the first operation may be used for the manufacture of gas for illumination by means of apparatus similar to that usually employed in the manufacture of gas from fixed oils. The gas thus obtained requires no purification; it possesses more illuminating power than that obtained from resin, and almost as much as the gas obtained from fixed oils.

The rectified oil No. 1, indicating on the alchometer about 82°, and which is about two-thirds of the oil submitted to the second distillation, is suitable for superior illuminating purposes, being burned in lamps similar to those used for schist oil. This oil is also applicable for the solution of caoutchouc and resins and for the preparation of varnishes.

The quality No. 2, either by itself or mixed with fatty or fixed oils or with oleine, which it will dissolve in any quantity, forms an excellent product for lubrication and preservation of machinery, arms, and metals in general. The residue may be used in the combustion of bituminous mastics; it may also, mixed with any cheap fatty matter, serve as a lubricant for axles, gearing, &c.

The empyreumatic oil obtained from the native bitumen of Cuba is applicable to the manufacture of stearine candles, and will also yield paraffine.

1791.—George Hinton Bovill, of Durnsford Lodge, Wimbledon, Surrey, for "*Improvements in the manufacture of gas; also in the manufacture of coke and other fuel.*" Patent dated Aug. 6, 1858.

In the manufacture of gas according to this invention, the retorts from which the gas is collected are combined with other retorts or ovens in which only coke is produced, the gases produced in these latter retorts being consumed, and serving by their combustion to maintain the necessary temperature both in the gas retorts and in the coke ovens.

The retorts are arranged in a vertical position, or so slightly inclined that the materials which they contain will descend in them by their own weight. They are so arranged that, adjoining each retort from which gas is collected, there is another which produces only coke, and this is separated from the gas retorts by a thin wall of fire-brick (that being the material of which the retorts are constructed). Surrounding each set of retorts or ovens are flues, with which the coke oven communicates. In these flues the gases passing from the coke oven are consumed, and assist in heating the coke oven and the gas retorts. Within each of the gas retorts there is a tube passing from end to end of the retort, and perforated to facilitate the escape of the gas. This tube is formed in sections, each of which is about one-third of the length of the retort, and has a flange at its end so nearly fitting the retort as to prevent the material which the retort contains from passing it. These flanged pipes are employed to facilitate the charging and discharging of the retorts when a part only of the charge is drawn at one time, and which is done in the following manner:—The cover at the upper end of the retort is removed, and a bar is introduced into the interior of the tube, so as to get a firm hold of the two uppermost sections. The bottom is then removed from the retort, and the lowest section of the tube, with the coke which it sustains, falls out. The bottom is then replaced and the other section of the tube allowed to descend on to it, thus leaving the upper third of the retort vacant to receive the charge. The coke ovens are charged from time to time in a similar manner—*i. e.*, a charge equal only to a part of the contents of the retort is introduced at one time, by which excessive cooling of the retorts and ovens is avoided.

In the coke ovens it is not necessary to use tubes, as, when discharging the coke, that which is above the portion to be discharged is supported for the time by bars introduced for the purpose.

The gas may be collected from either the top or the bottom of the retorts. If it be taken from the top, a rich gas will be obtained, but the coke will be porous, like ordinary gas coke. If the gas be taken from the bottom, an increased quantity of poorer gas will be obtained, and at the same time a denser coke will be produced. These changes are consequent upon tarry vapours being caused to pass over the already incandescent coke.

In employing horizontal gas retorts in combination with coke ovens so arranged as to be charged at the top and discharged at the bottom, as before described, it is preferred to arrange the said gas retorts so that their sides shall form a portion of the wall of the coke oven, so that the coal may be distilled and carbonized by the heat of the coke and the gas arising therefrom. Retorts so set would be charged and drawn in the usual way, the heat being kept up by the method above mentioned of working the coke oven. It is preferable to arrange the gas retorts one above another and between two sets of vertical coke ovens. Above and below each of the gas retorts a flue is formed communicating with the coke ovens and with the chimney. In this manner the retorts are heated on every side, and a regular temperature is maintained.

When it is desired to manufacture coke, without at the same time producing and collecting gas, ovens of a similar description are used, arranged in a similar manner, so as to be charged at the top and discharged at the bottom, and separated the one from the other by thin division walls, by which the heat is communicated with considerable velocity. In working these ovens it is so arranged that when one is charged with fresh coal or fuel the two adjacent ovens shall be in full operation—*i. e.*, that the material which they contain shall be at a red heat throughout.

The patentee is aware that coke ovens and gas retorts have before been set in combination in various ways, and he claims, therefore, only the combination of gas retorts with vertical or slightly inclined ovens, as before described.

Peat may be mixed with tar for fuel by taking the pieces of peat in the form in which they are cut, and first drying and immersing them in the tar. The peat so prepared may be used without further preparation. Also peat prepared by immersion in tar, and afterwards baked in an oven or retort at about 400° or 500°, without raising it to a red heat, is suitable for use as fuel for many purposes for which unprepared peat cannot be conveniently employed.

As respects this part of his invention, the patentee says that he is aware that a mixture of peat and tar or pitch has, before the date of his patent, been in some cases submitted to a process of destructive distillation in such a manner as to obtain an oil, and at the same time produce a fuel, by coking the mixture of peat with tar or pitch. He does not, therefore, claim the obtaining coke from a mixture such as above mentioned, but he claims the baking of such a mixture at a temperature lower than that necessary for coking, but sufficient to drive off the volatile constituents of the tar or pitch. In conducting the baking operation he employs an iron oven, such as is sometimes used for baking other fuel, and it is connected with a condenser to condense the portions of the tar volatilized by the heat. When the peat is too dense for the tar to penetrate it by simple immersion, the tar, or mixture of pitch and tar, or tar from which a portion of the naphtha or oil has been distilled, is forced thoroughly into the peat in a closed

vessel, and bituminous matter is pumped into it under sufficient pressure to accomplish the object. Pitch may be injected into the peat in this way by heating the vessel so as to keep the pitch in a fluid state. After the vessel has been filled, and the pitch is in a fluid state, the patentee prefers to obtain the pressure necessary for injecting the pores of the peat by pumping in tar, as that will not clog or interfere with the working of the pumps.

PROVISIONAL PROTECTION

HAS BEEN GRANTED FOR THE UNDERMENTIONED INVENTIONS.

2740.—RICHARD LAMING, of Hayward's Heath, Sussex, for "*Improvements in purifying gas and in turning sulphuretted hydrogen, carbonic acid, and ammonia, or their compounds, to profitable account.*" Dec. 1, 1858.

140.—SAMUEL THOMAS COOPER, of Upper Clapton, in the co. of Middlesex, gentleman, for "*Improvements in the use and application of artificial light.*" Jan. 17, 1859.

177.—WILLIAM EDWARD NEWTON, of 66, Chancery Lane, London, for "*Improved apparatus for measuring water and other liquids.*" A communication. Jan. 20, 1859.

189.—RICHARD HOWELL, of Smethwick, gas-fitter, and RICHARD JAMES WILDER, of Birmingham, hatter, for "*An improvement or improvements in taps or stop-cocks.*" Jan. 21, 1859.

192.—ALFRED DAVENPORT, of Birmingham, gas-purifier manufacturer, for "*An improved regulating burner for gas.*" Jan. 21, 1859.

203.—EDWARD DORSETT, of 76, Old Broad Street, London, tar distiller, and JOHN BENNINGTON BLYTHE, of Minerva Place, New Cross, Kent, merchant, for "*Improvements in the distillation of oil from coal tar, and in apparatus for preserving timber therewith.*" Jan. 22, 1859.

230.—HENRY BRECKNELL, in the city of Bristol, brassfounder, and JOHN DYER, of the same place, gentleman, for "*Improvements in cocks or valves.*" Jan. 25, 1859.

232.—BENJAMIN JOSEPH SPEDDING, of 9, Cross Street, Birkenhead, for "*Improvements in apparatus for generating and regulating gas, and for impregnating the same with volatile hydro-carbon fluids.*" Jan. 25, 1859.

269.—GEORGE DAVIES, of 1, Serle Street, Lincoln's Inn, London, for "*Improvements in apparatus applicable to measuring, regulating the pressure of, and consuming gas for illumination.*" Jan. 29, 1859.

NOTICE HAS BEEN GIVEN OF INTENTION TO PROCEED WITH THE UNDERMENTIONED INVENTION.

2412.—PIERRE BRUNON, of Paris, manufacturer, for "*An improved mode of manufacturing cocks.*" Oct. 29, 1858.

Legal Intelligence.

COURT OF QUEEN'S BENCH.

WESTMINSTER, SATURDAY, JAN. 15.

(*Sitting in Banco, before Lord* CAMPBELL *and Justices* WIGHTMAN, CROMPTON, *and* HILL.)

THE COVENTRY CANAL COMPANY, *Appellants;* THE OVERSEERS OF ATHERSTONE, *Respondents.*

Mr. SPOONER appeared for the appellants; solicitors, Messrs. Woodcock and Twist, Coventry: and Mr. A. R. ADAMS for the respondents; solicitor, Mr. Baxter, Atherstone.

This was a case stated for the opinion of the Court of Queen's Bench. The facts were as follows:—The Coventry Canal passes through several parishes and townships. Its total length is 32¼ miles, of which 4 furlongs and 201 yards are in the township of Atherstone. The said canal is carried over numerous embankments and aqueducts and other expensive works, and there are thirteen locks situate in various parts of the said canal, two of which said locks are in the parish aforesaid. The repairs of these thirteen locks are annually expensive. The total cost of these repairs in the year ending Aug. 31, 1857, amounted to about £450, of which sum £105. 2s. 8d. was expended in repairing the said two locks in the township of Atherstone. The said locks are essential to the working of the canal in its several parts. The canal company are owners and occupiers of the canal, but not carriers along the line. They derive their profits solely from the tolls, rates, and duties payable to them for goods, wares, and merchandise passing along the line of their canal after certain rates of tonnage.

The gross amount of tonnage passing along the canal in the year ending Aug. 31, 1857, produced the sum of £11,579. 10s., and the gross expenses for the same year, exclusive of property and income-tax, amounted to £4263. 10s. 4d., leaving a net profit of £7316. 0s. 8d. The gross earnings of the canal in the township of Atherstone in the last mentioned year produced the sum of £185.

The appellants contended that the sum of £185 was the proper sum on which to have the rate to be made on them for the respondent township, and that the following deductions ought to be made therefrom, viz.—1. Tenants' profits at per cent. 2. Share of salaries of clerks, collectors, and engineers, costs of supplying water, and general management (not coming under the head of repairs in maintenance of works), which are common to the entire canal on the mileage principle, by dividing the same among the several parishes simply according to the distance which the canal passes through each, £31. 4s. 4d. 3. The expenses of maintaining and repairing the works of the canal, and the said two locks in the respondent township, the only amount incurred in the said year ending the 31st August, 1857, being the said sum of £105. 2s. 8d. for the repairs of the said locks. 4. The poor-rate, £2. 12s. The respondents contended that if the appellants ought to be rated on the said gross earnings of £185 as contended by them, the appellants were only entitled to have the deductions from the said sum of £185 made as follows:—1. Tenants' profits at per cent. 2. Share of salaries and other expenses upon the mileage principle as stated by the appellants, £31. 4s. 4d. 3. Share of the annual expenses of the repair of the works and locks of the canal, calculated also on the mileage principle, and not treated as local expenses as contended for by appellants, the said locks and works being essential to the effective working of the whole canal, £29; and the respondents further contended that they were entitled to rate the part of the canal situate in their said township at a higher value than that represented by the gross earnings of the said part of the canal, inasmuch as the works and locks in the said township are contributory to the earning of the profits in every part of the said canal, and without such locks and works the traffic on either side would have no existence.

The questions for the opinion of the court were:—1. Whether the appellants were to be assessed on the gross earnings of the canal in the respondent township, as contended by them, or whether respondents are entitled to assess appellants on the higher value contended for by them. 2. Whether the deductions for repairs and maintenance of the locks and works of the part of the canal in the respondent township were to be made as contended by the appellants or by the respondents.

According to the decision of the court the rate was to be altered and amended; the various items to be settled between the parties by subsequent arrangement according to the principle of rating agreed on by the court.

Mr. ADAMS, for the respondents, submitted: There are two questions in the case—1st, the principle for deductions; and, 2nd, the principle on which the gross earnings are to be calculated. As to the deductions, the two first items are conceded on both sides, and the fourth; and what remains for discussion on that head is, whether the repairs of the works should be reckoned on the mileage or the parochial principle. The mileage principle ought to prevail, the locks and embankments being ancillary to the whole navigation. And he relied on this point upon the cases of *R. v. Great Western Railway Company*, 15 Q. B. 379; *R. v. London and Brighton Railway Company*, *R. v. South Eastern Railway Company*, and *R. v. Midland Railway Company*, 15 Q. B. 313; *R. v. Southampton Dock Company*, 14 Q. B. 587; *R. v. Hammersmith Bridge Company*, 15 Q. B., 369; *R. v. Mile End Old Town*, 10 Q. B. 208; *R. v. Cambridge Gas Company*, 8 A. and E. 73, as establishing the rule that the whole series of locomotive expenses is to be spread over the whole line on the mileage principle. As to the question of contributive value, he relied upon the following cases to show that the mileage principle applied to the gross earnings:—*R. v. New River Company*, 1 M. and S. 503; *R. v. South Western Railway Company*, 1 Q. B. 558.

Mr. SPOONER, for the appellants, denied that the cases cited were applicable to the case of a canal. Railway proprietors are carriers along the line, but here, as found in the case, the appellants are not carriers. He relied upon *R. v. Kingswinford*, 7 B. & C. 236, and *R. v. Oxford Canal Company*, 10 B. & C. 163. The question is entirely local, the expenses are local, and the test is what would a tenant give for the portion of the canal situated in the parish; the basis of the rate is to be the gross earning in the parish. The deductions are local also in respect of repairs of locks and works.

Mr. ADAMS, in reply, said, it must be conceded that upon principle the cases of *R. v. Oxford Canal Company* and *R. v. Great Western Railway Company* are conflicting. Railways are not carriers, but are rated as canals, which have the additional advantage of carrying goods and passengers for profit. *R. v. Grand Junction Railway Company*, 4 Q. B. 18, was cited.

The court took time to consider.

SATURDAY, JAN. 29.

Lord CAMPBELL delivered judgment. He said: In this case it is conceded that the gross earnings of the canal in the respondent township, amounting for the year to the sum of £185, shall be taken as the basis of the calculation of the sum in which the company are liable to be rated to the relief of the poor within the township. A claim to reduce this sum is put forward by the respondents, in respect of the benefit alleged to be derived from the land in other parishes through which it passes from the two locks within the township. This claim is to be made only in the event of the court holding that the expense of maintaining those two locks, amounting to the sum of £105, must be deducted from the £185, the amount of the gross earnings. The real question which we have to decide, is whether the deduction is to be allowed. We are of opinion that the expense of maintaining the two locks within the township does not come within the category of local expenses, and ought to be thrown upon the whole line of the canal. This must be considered as one of those points decided in the *Queen v. the Great Western Railway Company*, 15 Q. B. 1089. That was the case of rating a railway, and there the question arose how the expenses of maintaining such works as a tunnel, on an inclined plane, should be dealt with. The court said, "without these the traffic on either side could have no existence, and it would be wrong to set those wholly and exclusively against the receipt on the same part of the line." The locks on a canal are like inclined planes on a railway, to point a transit where there is a change in the level of the country to be travelled over. In controverting this authority, reliance was placed by counsel for the appellants, upon what was said by Justice Bayley and Justice Littledale, in the *King* and the *Oxford Canal*, 10 B. C. 176, as to the expense of repairing the banks of the canal being to be considered as *local*. But those very learned judges do not there seem to have had in contemplation *important special works*, constructed *necessarily* for the use of the whole canal. If there were an aqueduct created to carry a canal across a valley, the whole expense of repairing might very possibly be greater than the whole of the gross receipts of the traffic on the canal within the parish where the aqueduct stands. Shall it be said that the canal company is not liable to be rated to the relief of the poor within the parish? If not, then the ratepayers are damnified by the canal passing through the parish, for, possibly, the number of the poor to be relieved would be increased, and the property ratable would certainly be diminished, for the land occupied by the canal, which was before rated, would cease to be ratable; but no injustice or inconvenience seems to follow from saying that such expenses are to be deducted from the gross profit of the whole line of this canal or of the railways. An attempt was made to show that the decision in *Regina v. the Great Western Railway Company* is not applicable to this present case, because here the company are not carriers. There certainly is considerable doubt in applying the rule laid down in the Parochial Assessment Act to canals and railways passing through many parishes; and we had hoped that the Legislature would have relieved us from this difficulty by laying down rules of rating more applicable to that species of property, rapidly increasing in amount, which does not seem to have been in contemplation when the Parochial Assessment Act passed. But the Legislature declined to interfere, and we have, therefore, been driven to dispose of all these cases in the best manner we could, and we see no aggravated difficulty in applying to them the only rule given to us, whether the companies are carriers themselves or derive their profits in the shape of tolls, for using the means of conveyance which they furnish to those parties without furnishing the vehicles to convey, or the moving power. For these reasons we think, upon the question now before us, we ought to give judgment for the respondents.

MIDDLESEX GENERAL SESSIONS.

GUILDHALL, WESTMINSTER, FEB. 11.

Before Mr. PASHLEY, *Q.C., Assistant-Judge.*

GAS AND WATER COMPANIES' APPEALS.

On the list of cases appointed to be heard this day, there were twelve appeals by the East London Water-Works Company against sewers-rates in some of the townships and parishes through which their mains are laid, and one appeal by the same company against a general rate in the parish of St. George-in-the-East.

There were also appeals by the West Middlesex, Grand Junction, and Southwark and Vauxhall Water Companies, and the London and Equitable Gas Companies, against poor-rates. Some of these appeals had been respited from previous sessions.

On the ASSISTANT-JUDGE taking his seat, he said he wished to intimate to

the learned counsel engaged in those cases which had been before this court on former occasions, that the Court of Queen's Bench had appointed the 25th instant for delivering judgment on the appeal of the West Middlesex Water-Works Company, upon which a special case had been submitted to them. That judgment would of course determine the principle upon which the other appeals should be dealt with, and it was therefore advisable that they should now be further respited.

Mr. DOWDESWELL said that was the course he had intended to suggest to the court.

THE IMPERIAL GAS COMPANY, *appellants;* THE PARISH OF PADDINGTON, *respondents.*

This was an appeal by the company against a poor-rate of the parish of Paddington made on the 6th of April, 1858.

Mr. BOVILL, Q.C., and Mr. BODKIN, appeared for the appellants, and Mr. DOWDESWELL for the respondents.

The court having been occupied during the whole day in hearing an appeal by the North London Railway Company, Mr. BOVILL applied at a late hour to have an early appointment made at a future sitting.

The ASSISTANT-JUDGE said he thought the case had better stand over until the judgment in the Queen's Bench was delivered.

Mr. DOWDESWELL said this was a case which must occupy considerable time, as the court would have to go into the whole question of the company's works and produce.

The ASSISTANT-JUDGE said, if the parties agreed amongst themselves as to the most convenient course to be adopted, he should be happy to give effect to it.

Mr. BOVILL said he thought they were agreed thus far, that it could not be taken that day.

The ASSISTANT-JUDGE: What sort of a case is it? Are you at daggers drawn on all points, so that you will have to prove everything?

Mr. BOVILL: I should think not. The case is one of so much importance that I am inclined to believe, when certain facts have been stated on my side and established by one or two witnesses, which is all I should call, I should then be prepared to make some admissions on the other side, so as to save the necessity of any lengthened inquiry, and probably you would then think it right to allow us to go to the Queen's Bench. What I propose is, that after a statement on both sides, we might assume a state of facts which would raise a principle upon which, with your consent, we could state a case for the court above. This question of rating gas-works has now assumed an important aspect.

The ASSISTANT-JUDGE said that for the last two sessions he had had to respite cases with the consent of counsel on both sides, and they were now adjourned until after the 25th.

Mr. BOVILL said those were cases of water-works.

The ASSISTANT-JUDGE said it was the same thing. Both were fluids, and both were conveyed in pipes. The principles must be the same in each. It seemed to him that the most convenient course would be to adjourn this appeal until the judgment to which he had referred was given. There could be no doubt that the judges of the Court of Queen's Bench had found great difficulty in arriving at a decision on the point. It was highly probable, too, that that judgment would materially facilitate the decision of this appeal.

Mr. DOWDESWELL: It will settle it.

The ASSISTANT-JUDGE: If that is so, it would be more convenient to the parties, and would save a great deal of time, if they postpone this matter instead of keeping their witnesses here for the purpose of raising a point of law which may be entirely disposed of by the case about to be decided.

It was then agreed that the appeal should stand over until the 13th of April next.

GREENWICH POLICE COURT.

THURSDAY, FEBRUARY 3.

(*Before Mr.* TRAILL.)

BADGER *v.* CRYSTAL PALACE DISTRICT GAS COMPANY.

The secretary to the Crystal Palace District Gas Company appeared to answer an information preferred against him by Mr. Charles Robert Badger, district surveyor of Lewisham, for that he did, on the 3rd of January, unlawfully, and in contravention of the 7th and 8th Vic., chap. 84, sections 54, 55, and 63, place and use for carrying on business a certain gasholder and tank on the premises or gas-works of the Crystal Palace District Gas Company, situate at Bell Green, Sydenham, and which said gasholder and tank is within the distance of 40 feet northwards from the public way known as Southend Lane, and also within the distance of 50 feet eastwards of vacant ground.

Mr. BODKIN, instructed by Mr. G. G. Durrant, solicitor, of Chancery Lane, appeared for the company, and submitted that the summons did not disclose any legal offence. The only words in the Act bearing upon the question were these—that "It shall be not lawful to establish or newly carry on any such business, either in a building, vault, or open air, within the distance of 40 feet from the public highway." That is, if this had been a new business the question would then have arisen whether it was such a business as came within the meaning of the Act.

Mr. TRAILL referred to the Act, and read the 63rd section, which stated that the Act was not to apply to gas-works erected before the passing of the Act, or additions thereto. The summons was, perhaps, informal; but the offence was clearly brought within the Act.

Mr. BODKIN said he relied on the 63rd section for the reply to the charge, as these gas-works were erected prior to the passing of the Metropolis Building Act, in which those sections were incorporated, and the present works were merely additions to them.

Mr. TRAILL said the first point certainly was, whether the business was one included in those enumerated in the 54th section; and it appeared from the 63rd section that by implication it was included, and they must go into the facts.

Mr. *Badger* was then sworn; but

Mr. BODKIN said the summons did not aver that this business was "established or newly carried on," as contemplated by the Act.

Mr. TRAILL ruled that the informant was not compelled to aver that.

Mr. *Badger* then said: I discovered the progress of the tank five or six months ago, on the premises in the occupation of the Crystal Palace District Company's gas-works. I served notice on Mr. Aird; but as it might be used for any other purpose, I was advised not to continue the proceedings against Mr. Aird; and, in fact, I took no proceedings till use was made of the tank. I found it in use in the early part of last month, and it was admitted to me by the secretary that it was in use.

Mr. TRAILL: Can you fix a date as to the erection of the tank?

Mr. *Badger:* I cannot. I first saw the gasholder about two or three months ago. It has been understood that I have objected to it all along.

Mr. TRAILL: Do you, of your own knowledge, know that it contained gas?

Mr. BODKIN: That is admitted. I have also to submit that the tank and gasholder are only implements of trade.

In reply to questions by Mr. TRAILL,

Mr. *Badger* said the works were originally called the Sydenham Gas-Works. This could not be considered an extension of works erected before the passing of the Act. It was within ten feet of the public way, and ten from the vacant ground.

Mr. BODKIN: The works are all of them in a cluster, are they not?

Mr. *Badger:* Yes.

Mr. BODKIN: And the gasholder is filled by pipes from other parts of the works?

Mr. *Badger:* Yes.

Mr. BODKIN said the 63rd section had carefully provided that the Act should not affect gas-works existing at the time, or extensions of those works. It was impossible for clearer language to be used than in those sections, which were incorporated in the 18th and 19th Victoria, c. 92.

Mr. TRAILL said the words "heretofore existing" referred to the 8th and 9th Victoria, and therefore the works, to come under the 63rd section, must have been erected before the passing of that Act.

Mr. BODKIN argued that the words, being incorporated in the Act 18th and 19th Vic., referred to buildings erected prior to the passing of that Act.

Mr. TRAILL said there might have been doubt as to whether the gas-works were included in the businesses enumerated in the 54th section if the 63rd section had not clearly set that point at rest; but the 63rd section referred to works, and extensions of works, erected prior to the passing of the Act 7th and 8th Vict.

Mr. BODKIN then suggested that the question should be referred to the Court of Queen's Bench, in the shape of a special case, which was agreed to; and it was arranged that he should draw up the case, and submit it to Mr. Traill for his approval.

The penalty specified by the Act was one not exceeding £50 for every day the building, &c., was used; and Mr. Traill ordered a nominal penalty of 5s. per day for two days, the works to be continued in operation till the decision of the Court of Queen's Bench should be given.

Miscellaneous News.

WESTERN GAS COMPANY (LIMITED).

An Extraordinary General Meeting of this Company was held on Thursday last, at the Company's Offices, Argyll Street, Regent Street—F. W. RUSSELL, Esq., M.P., in the chair.

The CHAIRMAN, in opening the proceedings, said:—Gentlemen, the object of this meeting has been considered by the board very fully, and before we have submitted the resolutions to you, they have been considered by Mr. Buller, the eminent conveyancer. It is upon his advice that we have acted, both as a lawyer and a gentleman connected with joint-stock companies' operations. The very circumstance of calling this meeting is a proof of the steady progress of the company. It is impossible that we, a gas company, can ever close our capital account so long as we occupy ground upon which large and valuable buildings are every day extending. As new streets and new shops spring up, so must the supply of gas be increased, and the means of manufacturing and distributing that gas must also increase with the demand. Within the last half year the results of the business have been particularly cheering and encouraging, and I have very little doubt that the reasonable expectations of the proprietors will be fully realized. (Hear, hear.) The only complaint against us is that of not getting as much of our gas as the consumers want. All we have to do is to make gas, and there are plenty of persons to consume it and pay us for it. (Hear, hear.) Under these circumstances, having called up the entire of the subscribed capital of the company, and having borrowed to the full limits of our borrowing powers, we submit to you the resolutions which the secretary will presently read. We cannot refuse supplying occupiers of new houses, and we cannot supply unless our shareholders give us the means of supplying. I am quite sure, therefore, that all that we shall have to do will be to submit the resolutions to you, and they will be carried, not only unanimously, but with acclamation. (Hear, hear.)

After a short discussion on matters of mere detail, the following resolutions were unanimously carried:—

Resolved, on the recommendation of the board of directors, as follows, to wit:—

1. That the 20,000 issued shares, now distinguished as A shares and B shares, being all fully paid up, and conferring like privileges, shall henceforth form one class, and be distinguished as A shares.

2. That there shall be, and there are hereby created, 5000 additional shares of £10 each, and of the aggregate nominal amount of £50,000 in the capital of this company, increasing the capital from its present amount of £250,000 to £300,000.

3. That the 5000 now unissued shares in the present capital of this company, and the 5000 shares now created, making together 10,000 shares of £10 each, and of the aggregate nominal amount of £100,000, shall be distinguished as "new B shares."

4. That a deposit of 10s. on every new B share shall be paid on the acceptance thereof.

5. That the calls on the new B shares shall be made at such times, and shall be of such amounts as the board of directors shall from time to time think fit, within the following limits, that is to say: No call shall exceed £1 a share, and three months at least shall be the interval between the days appointed for the payment of successive calls.

6. That the new B shares shall, in the first instance, be offered by the board of directors at par to the shareholders, in proportion as nearly as the board find convenient to the number of their respective shares. And such of the new B shares so offered as shall not be accepted by the shareholders within such a period, not less than twenty-one days, as the board shall prescribe, shall be offered by the board at par to the shareholders who accepted the first offer in like proportion.

7. That the board of directors be and they are hereby authorized to issue, at such times and to such persons as they shall think fit, all or any of the new B shares not accepted by the shareholders, and to issue them at or above, but (except with the sanction of a resolution of an extraordinary general meeting of the company) not below par.

8. That the board of directors be and are hereby authorized to issue any of the new B shares not accepted by the shareholders, as fully paid-up shares, to any of the mortgage or bond creditors of this company in satisfaction and discharge in every case of a principal sum of debt at least equal to the nominal amount of the new B shares so issued.

9. That the board of directors be and they are hereby authorized to fix, as they shall from time to time think fit, the amount of the premium, if any, at which any of the new B shares shall be issued to any persons other than the shareholders, to whom they are to be offered at par.

10. That the amount raised by premium deposits and calls on the new B shares be applied by the board of directors, when and as they shall think fit, in or towards the discharge or reduction of the mortgage or bond debt of the company, or for any of the purposes for which capital of the company shall from time to time be applicable.

11. That the board of directors be and they are hereby authorized to carry the objects of the preceding resolutions into effect at such times and in such manner as they in their discretion shall think best for the interests of this company.

The proceedings terminated with the usual vote of thanks to the chairman and directors.

REPORT AND BALANCE-SHEET OF THE PHŒNIX GASLIGHT AND COKE COMPANY.

The following is the report for the half year ending at Christmas, 1858, to be submitted to the proprietors at the next half-yearly meeting:—

The directors submit to your consideration the trade account for the half year ending at Christmas last, together with the balance-sheet at that period; and they have much pleasure in reporting that the works are in a satisfactory state.

During the last half year, a net profit of £19,519. 15s. has been realized; out of which the directors recommend that a dividend for the half year at the rate of 7 per cent. per annum (being £16,380), together with a bonus of 10s. per cent. on the capital of the company (being £2340), and also the income-tax (being £505. 1s. 6d.), or a total of £19,225. 1s. 6d., be now declared; leaving a sum of £294. 13s. 6d. to be added to the balance of £13,090. 17s. 5d., making a balance of £13,385. 10s. 11d. undivided.

ABSTRACT OF THE TRADE ACCOUNT FOR SIX MONTHS, ENDING CHRISTMAS, 1858.

Dr.				*Cr.*		
For coals used			£21,409 19 7	By rental for light		£59,036 13 0
Tradesmen's bills for materials supplied			7,088 8 0	Coke made for sale		12,459 5 4
Law expenses			39 10 0	Breeze ditto		239 0 0
Retorts used			436 15 0	Tar ditto		1,045 19 1
Meters—				Ammonia ditto		871 19 9
Repairs	£ 660 16 11			Interest received		135 13 8
Fixing	702 15 0					
Depreciation	980 17 0					
		2,341 8 11				
Rent, rates, and taxes		1,934 7 2				
Directors, £750; auditors, £50		800 0 0				
Salaries		2,784 7 11				
Wages paid		9,367 15 8				
Bad debts and overcharges		329 5 9				
Investment-fund		500 0 0				
Reserve for depreciation on plant and leasehold property		4,233 17 10				
Net profit		19,519 15 0				
		£73,788 10 10				£73,788 10 10

ABSTRACT OF THE BALANCE-SHEET AT CHRISTMAS, 1858.

Dr.				*Cr.*			
For capital of 9000 £60 shares, £52 each paid up			£468,000 0 0	By amount of plant at Midsummer last			£423,384 0 10
Unpaid dividends			335 15 11	Less—			
Unpaid tradesmen's bills, &c.			8,296 1 8	Reserve for depreciation of plant and leasehold property			4,233 17 10
Investment-fund			2,022 19 1				£419,150 3 0
Balance of profit and loss—				Add—			
Undivided balance	£13,090 17 5			Expended this half year in extension of works			5,412 18 0
Half year's profit	19,519 15 0						£424,563 1 0
		32,610 12 5		Railway bonds for investment-fund			2,003 9
				Amount due from sundries—			
				Christmas quarter	£38,631 3 10		
				Arrears	1,091 18 9		
				For total rental	£39,723 2 7		
				Amount due for coke	2,533 17 7		
				Ditto breeze	157 0 0		
				Ditto tar	741 10 10		
				Ditto ammonia	501 9 6		
				Ditto sundries	1,671 10 0		
						45,328 10 6	
				Stock of coals	£5,929 10 0		
				Ditto coke	141 15 0		
				Ditto breeze	9 7 6		
				Ditto tar	199 10 0		
				Ditto ammonia	183 17 6		
				Ditto retorts	1,343 0 6		
				Ditto meters	14,129 14 10		
						21,886 15 4	
				Balance at treasurer's	£4,383 12 9		
				Ditto at interest	13,100 0 0		
						17,483 12 9	
		£511,265 9 1					£511,265 9 1

THE MANCHESTER GAS-METERS.

The Second Quarterly Meeting of the Manchester City Council was held on Wednesday, the 2nd inst.—IVIE MACKIE, Esq., presiding. The business related chiefly to gas-meters, the gas committee, and Mr. Cleminshaw.

The TOWN-CLERK read the proceedings of the gas committee, which included a statement from Mr. Cleminshaw of the cause of the reduction in the amount of profits of the gas committee compared with the previous year, which amounted to £12,758. A letter from Mr. Cleminshaw had been referred to a sub-committee. The letter stated that the writer had been peremptorily informed by his medical adviser that it was absolutely necessary, for the sake of his health, that he should be relieved from all attention to business; and he considered it his duty to place his resignation in the hands of the gas committee. Mr. Cleminshaw agreed to withdraw his resignation on its being stated that leave of absence might be granted. The sub-committee felt satisfied that their recommendation would be approved by the committee. Mr. Cleminshaw stated that he should be unwilling to receive more than half his salary during his absence. It was moved in committee that leave of absence be granted. An amendment was moved that Mr. Cleminshaw's resignation be accepted. There were five votes for the amendment and five against. The chairman gave his casting vote against the amendment. The further consideration of the report accompanying Mr. Cleminshaw's letter was adjourned for six weeks. The town-clerk also read from the proceedings a letter from himself to Mr, Taunton, inquiring whether the statement made that Mr. Taunton desired to be supplied with a meter by Mr. Crosley embracing all the precautions, and not such a meter as would be ordinarily sold to consumers, was correct; further, whether Mr. Crosley sent the meter sealed, and stipulated that the seal should not be broken, and also that the meter should be tested only in his presence. This was stated upon the authority of Mr. Crosley to have been the case, and that, notwithstanding such stipulations, the seals were broken by Mr. Taunton, and that Mr. Crosley was not allowed or requested to be at the experiments. Mr. Taunton's letter in reply was a very long one. The town-clerk was about to read it, when

Councillor RUMNEY interposed, and said that the letter from Mr. Taunton was not read at the proceedings of the gas committee, it not being thought desirable. If the letter were now read it would become public, and he would have to deal with it. The letter had only been read at the meter sub-committee, and it seemed to be one not worthy of much notice.

The TOWN-CLERK: It is on the proceedings.

Councillor RUMNEY: I do not know how it has come upon the proceedings.

The TOWN-CLERK: Nor do I. Mr. Rumney will recollect the discussion we had at a recent meeting of the gas committee, but most unquestionably, if the council will excuse me, I shall be very glad not to have to read a long letter. But here it is, and, as gentlemen will see, I read much more extensively the proceedings of the gas committee at the present time than the proceedings of any other committee, simply for fear that I should be accused of not giving the council all the information in my power. (Applause.) If Mr. Rumney will allow me to state the contents of the letter—which I can do in half a dozen words—it will save the council the necessity of hearing it.

Councillor RUMNEY: The letter was not read at the gas committee.

The TOWN-CLERK did not remember, for he was not present. He held that it would be quite in order to read it; and, on a motion to that effect by Alderman Clark, seconded by Councillor Adshead, the letter was read. Mr. Taunton, in his letter, said he most unhesitatingly denied the whole of the statements made by Mr. Crosley with regard to the meter he (Mr. Taunton) had for testing. Mr. Taunton went at length into each statement in reply to the questions in the town-clerk's letter, and designated the proceedings of Mr. Crosley as "a cheat and trick from first to last." Mr. Taunton used the expression, "Mr. Crosley's counsel." The town-clerk said he could not explain what this meant, but supposed, from the talent Mr. Rumney had displayed, that he was supposed to wear a gown and wig. (Laughter.) There was a report on the proceedings from Mr. Cleminshaw, stating that he had, after considerable difficulty, obtained one of Mr. Crosley's recent meters, and, on comparing experiments made with it with those obtained from a former meter, Mr. Cleminshaw thought they completely confirmed the truth of his first experiments. It had been resolved that Mr. Crosley be requested to send an ordinary 3-light meter. Mr. Crosley, in reply, expressed his willingness to do so on the committee rescinding their former resolution, which stated that the use of his meters could not be sanctioned, and expressing a hope that there would be no more "doctoring in the back shop."

Councillor NEILL said he had expected that the chairman of the gas committee would have offered some explanations of proceedings going on at the gas-works in reference to a charge that had been made against a member of the council in the newspapers. He confessed, as a member of the council, that he felt that the council were somewhat lowered in the estimation of the public by it being suggested that any one of their members was capable of conduct to further their own personal interests in respect to the gas-works. He was unwilling to believe that of any gentleman of the corporation, and knowing something of the gentleman referred to, he was unwilling to believe that there was any truth in the statement. (Hear.) At the same time, he did believe that both he and other gentlemen connected with the gas committee had been guilty of something like temporizing with the workmen. It was unfair and unjust to the committee of which they were members that they should do anything of the sort as individuals. (Hear.) It was always best to consult the committee, and if they had been in the habit of having the conduct of large numbers of men of their own, they would have seen the very great impropriety of their conduct. There was another statement made in the article in the newspapers to which he begged to call the attention of the council. It was stated, in reference to the digging of a gas pit, that the committee had been digging a pit which cost them £1500, and that they had since let a larger one by contract for £560. He had ascertained that this was not exactly correct, but still the state of things, if he was correctly informed, was bad enough. The committee had dug a pit, the excavating of which had cost £1215, and they had puddled it an expense of £274, with the labour of their own men, making a total of something very near £1500. Well, he understood that the same committee had since let the excavating of a pit, larger than that, for £480. (Hear.) Now, he thought that the public and the council had some right to complain. This was bad management with a vengeance. Who took the charge of this work? Who was responsible for it? He could not, of course, blame the individual members of the committee; they could not be supposed to have sufficient knowledge, or, in fact, sufficient time, to go there and superintend the ex-

cavation of the pit. But why did they entrust the excavation of an important work like this to a man who must evidently know nothing about it? He was either altogether unfit in point of ability, or else he should not have the confidence of the committee after this. If this work was costing about three times the amount that it ought to have done—and a proper man who understood the value of this work would know what it cost—it should have been found out before it was a tenth part done, instead of which they were allowed to finish it at an expense of nearly three times what it ought to be. The gas committee were required to give an explanation, but he was afraid they would not be able to give a satisfactory one to the council. He thought it a very flagrant case that any committee of that council should take upon themselves to be directors, and enter into works of this nature, doing them at nearly three times the proper cost. He was told that it was done for the sake of keeping a few men about the place. These men were not skilled artisans, but merely labourers, or else they were not fit for this work. He apprehended they were excavators, and were retained because they would be of use at another part of the year; but it was rather expensive to do this, at a cost of £700 or £800 in one winter to the committee. (Applause.) He was struck that morning by the proceedings of the gas committee. It appeared to him that they were at sea altogether. That they were not getting harmoniously on was shown by the fact that in a very important question they were equally divided. (Hear.) He thought that the large interests entrusted to this committee were of such a nature that this ought not to be allowed to go on. (Hear.) He thought the council would do well if they selected three or four of their best business men and add them to that committee. (Hear.) He did not wish to throw any reflections upon the committee, but he did say, in looking over the names, he thought the council might have selected better men. (Laughter.) He meant to say, men more conversant with large works like this—men more conversant with digging pits and making gas. He did not know whether it would be competent for this to be done before the year's end, but if it was, he should have great pleasure in moving, or giving notice, that three or four gentlemen be added to that committee. ("Hear, hear," by Mr. Shuttleworth.) He regretted to say that the chairman of that committee had been absent from it many times, and also the deputy-chairman, on account of ill health. The very able manner in which the chairman and deputy-chairman had at all times conducted the debates of the council, in respect to the making of gas, did them very great credit. (Hear.) He was afraid that some of this mismanagement had taken place in consequence of their absence. He should be glad to hear some explanation of the very extraordinary statements and proceedings which had taken place in connexion with this committee.

Councillor RUMNEY said he very much regretted that he should be under the necessity of again introducing this subject of meters. He had not the slightest idea that the letter which the town-clerk had read would have been entered upon the proceedings, else he should have made himself more familiar with its contents and have been prepared more fully to substantiate the assertions he had hitherto made, and to have dealt with this letter which he had never he thought seen, and had heard read only once before that morning. He was obliged, therefore, very reluctantly, and very unpreparedly, to open this question of meters again. He would much rather have said nothing more about it till they had seen the report from the two gentlemen who were appointed to examine the meters. (Hear.) The council would therefore see that he was not at all to blame in introducing the matter again. He did it very unwillingly, but in vindication of himself he was obliged to make a few remarks upon the letter of Mr. Taunton, and they should be as few as possible. The council would bear in mind that Mr. Taunton declared that the meter which he examined of Mr. Crosley's was made for that particular examination. He (Mr. Rumney) could state with confidence that such was not the fact. Mr. Taunton asserted that this particular meter was manufactured in the interval between the period when the order was given and the meter supplied, although it bore a badge of 1857. Perhaps he had better read Mr. Crosley's letter which he had just obtained from the JOURNAL OF GAS LIGHTING in reference to that meter. Mr. Rumney read Mr. Crosley's letter, which stated that Mr. Rumney was perfectly correct in what he had said, and that the meter was made in February, 1857, at least sixteen months before the date of Mr. Taunton's application. Mr. Crosley denied that it was made for experimental purposes, or for Mr. Taunton, but was one of a class constructed to provide against certain frauds, and was intended for commercial use. Mr. Crosley concluded by saying that Mr. Taunton's statements were so utterly devoid of truth that he should think it a waste of time to deal further with them. Mr. Rumney added that he was quite prepared to re-affirm what he had already stated, and that there was no discrepancy in Mr. Crosley's statements. Mr. Crosley never stated that that was the only meter he constructed, and he (Mr. Rumney) had never thought it desirable to tell the gas committee—though it was stated by Mr. Crosley in his communication to the gas committee—that it was a meter of a class constructed to provide against certain frauds to which almost all other meters were liable. There were six or seven meters in stock that had not gone out, and he did not think it necessary to take the number of the last meter that went out on the other side of the vacant numbers. Mr. Taunton referred to another point, and he (Mr. Rumney) explained to the members of the meter committee, before that part of Mr. Taunton's letter was read, what actually took place, and gave to the committee a statement which was not at all affected by these charges in the letter of Mr. Taunton. Mr. Rumney entered into a detailed and circumstantial statement of the facts in proof of his assertion, and proceeded to say that Mr. Taunton had adduced no proof whatever that the meter was made for the special purpose of examination. There was nothing to invalidate the statements which Mr. Crosley had made. Mr. Taunton evidently understood one thing, and Mr. Crosley another. The numbers of the classes of meters one, two, and three, Mr. Taunton took to be bad, better, and good; but it would not be so understood in any other class of machines. Mr. Crosley meant the figures to signify simple and complex, some having more precautions than others, because a meter was a complex article, and there might be very much additional machinery put in to provide against the frauds to which wet meters were liable. He repeated that he did not see anything to invalidate the statements which he (Mr. Rumney) had made as Mr. Crosley's "counsel," if they would so call him. He merely stated what he believed to be the truth, and what he still believed to be the truth. He had not the slightest doubt that the statements made by Mr. Crosley were in this respect, and to this extent, perfectly accurate. Mr. Rumney next referred to the following report from the Gas-Meter Inspection Office, Liverpool, of an examination of a meter (Parkinson's), which stated "that the meter is so adjusted that it does not register against the supplier at any point, and even at the lowest water-level it is against the consumer to the extent of 8-10ths per cent., with three burners on, and to employ more lights would necessitate overfilling the meter with water to a higher level still so as to keep the float up and the valve open, thereby increasing the error against the consumer."

Gas-Meter Inspection Office,
Public Offices, No. 2, Cornwallis Street, Liverpool,
Dec. 9, 1858.

Sir,—In reply to your favour of the 4th inst., I beg to hand you the result of my testing the two 3-light meters manufactured by Parkinson and Co. and their predecessor as detailed below, viz.—

1. 3-Light meter, No. 1445, date 1852.—At water-line 1·01 per cent. fast or against consumer.
2. When filled to the top of syphon, 51·51 per cent. fast or against consumer.
3. At the lowest point at which it will give three lights, 5·66 per cent. slow or against company.

1. 3-Light meter, No. 40,006, date 1839.—At water-line 2·04 per cent. fast or against consumer.
2. When filled to the top of syphon, 61·29 per cent. fast or against consumer.
3. At the lowest point at which it will give three lights, 0·80 per cent fast or against consumer.

This meter is so adjusted that it does not register against the *supplier* at any point—in fact, as it will be seen above, even at the lowest water-level it is against the consumer to the extent of 8-10ths per cent. with three burners on, and to employ more lights would necessitate overfilling the meter with water to a higher level still, so as to keep the float up and the valve open, thereby increasing the error against the consumer.

I am, Sir, your obedient servant,
Mr. Councillor Rumney, Manchester. DANIEL HORTON, Official Inspector.

Gas-Meter Inspection Office,
Public Offices, No. 2, Cornwallis Street, Liverpool.
Dec. 9, 1858.

Dec. 7.—Testing One 3-Light Parkinson's Meter, No. 1445, Date 1852; State of Index when received on the 6th inst., 47,000.

Experiments.	Pressure.	Number of Lights.	Consumption by Cubholder	Consumption as indicated by Meter	Difference between Cubholder and Meter.	Meter per Cent. Fast.	Meter per Cent. Slow.	Time occupied in Experiment.	Rate of Consumption in Cubic Feet per Hour.	Remarks.
			c. ft.	c. ft.				m. s.		
1.—At water-level....	7-10ths	4	4·95	5·00	·05	1·01	..	21·20	13·81	Temp. Gas, 50. Water, 48
2.—With 26 cub. in. above ditto.....	7-10ths	4	4·47	5·00	·53	11·85	..	.	..	
3.—With 60 ditto.....	7-10ths	4	3·60	5·00	1·40	38·86	..	15·30	13·93	
4.—With 70 ditto.....	7-10ths	4	3·30	5·00	1·70	51·51	..	15·10	13·05	
5.—With 71·7-10ths do.	16-10ths	4	3·30	5·00	1·70	51·51	..	13·00	15·23	
6.—With 26 cub. in. below ditto.....	12-10ths	4	5·27	5·00	0·27	..	5·12	23·55	13·22	
7.—With 28 ditto.....	10-10ths	3	5·30	5·00	0·30	..	5·66	28·15	11·25	(*)

Dec. 8.—Testing One 3-Light Meter by Predecessor of Parkinson, No. 40,006, Date 1839; State of Index when received on the 6th inst., 45,000.

1.—At water-level....	3¼-10ths	6	4·20	5·00	0·10	2·04	..	..	..	Temp. Gas, 49. Water, 48.
2.—With 59 cub. in. above ditto.....	10-10ths	4	3·55	5·00	1·45	40·84	..	13·50	15·39	
3.—With 75 ditto.....	10-10ths	4	3·20	5·00	1·80	56·25	..	13·20	14·40	
4.—With 75 ditto.....	10-10ths	4	3·10	5·00	1·90	61·29	..	11·00	16·90	(†)
5.—With 3¼ cub. in. below ditto.....	10-10ths	3	4·96	5·00	0·04	0·80	..	23·00	12·93	(‡)

Sir,—The above are details of experiments upon 3-light meters known as Parkinson's and their predecessor, and referred to in my report of this date. Thinking you may wish to possess them, I have left them out of the report, imagining that you would prefer it in as condensed a form as possible.—I am, Sir, yours obediently,
R. Rumney, Esq., Manchester. DANIEL HORTON, Official Inspector.

Mr. Rumney said that this was what he had stated,—and which he would establish to the satisfaction of the council before he had done with it,—namely, that Parkinson's meter would register 60 per cent. against the consumer, a statement which had been denied again and again. But Mr. Parkinson himself testified on behalf of his own meter that it would not register against the consumer, while Mr. Bardsley and Mr. Cleminshaw admitted, after a good deal of difficulty, that it would register up to 28 per cent. against the consumer, and yet give a steady light. The council did not seem to believe in any engineering ability except on their own side, but he presumed they would accept Mr. Bardsley's statement. Mr. Rumney then read the following report from Mr. T. G. Barlow, Parliament Street, Westminster, giving details of further experiments upon the meters before examined in London.

42, Parliament Street, London, Dec. 15, 1858.

Sir,—The experiments I undertook to make for you by passing 1000 feet of gas through certain meters in succession, each of them charged to the extreme levels both above and below the adjusted water-lines at which they will work, with the view of testing the accuracy of the experiments made by us jointly on the same meters on the 24th ult., have occupied much more time than I expected, in consequence of the feeble pressure given in the district in which my laboratory is situated; this has, indeed, seldom been more than 2-10ths of an inch beyond that required to set the meters in motion, and has never at any time exceeded 5-10ths. The consequence has been that the average consumption of gas by three batswing burners has been only 9·52, 9·34, and 11·15 feet per hour in the three experiments, the extreme ranges having been from 8 to 20 feet per hour. Under these circumstances, I have not ventured to charge the meters up to the top of the spouts, or to draw off water to the lowest point, for fear of the lights being extinguished by any temporary diminution of the pressure below that required to overcome the friction of the meters—an accident which, notwithstanding this precaution, occurred twice during the course of the experiments. The results obtained must, therefore, not be taken as indicating the extreme range in registration to which such meters are liable, if the pressure is sufficiently great to set them in motion when charged with water up to the top of the spouts.

Before proceeding to give the details of these experiments, I must premise that I consider those we made on the 24th ult. to be more scientifically conducted, and far more to be relied upon for indicating accurate results; because in no experiment upon large quantities of gas extending over a considerable space of time and passing through several meters, can any reliable observation be made upon its temperature and state of hygrometric moisture on its passage through each meter; and hence no certain data can be obtained for the necessary correction of the registration of the several meter indices due to these causes. The measuring-drums of all meters are made to deliver certain aliquot portions of a cubic foot at each revolution, so that, by making a mark upon the drum and counting the revolutions as the mark passes the outlet on the top of the meter, perfectly accurate observations may be made; and if air of the same temperature as the water be used instead of gas for propelling the meter, the indications are not disturbed by any differences in temperature, nor are they liable to be affected by any alteration in the water-level. Thus, at the adjusted water-level the drum of an ordinary 3-light meter delivers one-eighth of a cubic foot at each revolution; and if the mark should stand opposite to the outlet on the 32nd revolution, while the gasholder indicates a consumption of four feet, the meter must be considered as absolutely correct, *although prolonged experiments upon large quantities of gas may give a different result.* I should, however, here remark that some of Crosley and Goldsmith's early meters bring the

* As low as it will work at this rate of consumption.
† 4-Light, burnt steadily and well in fourth experiment; the gasholder was shut off and turned on suddenly several times without causing water to flow over syphon-pipe.
‡ The lowest point at which the meter will give 3 steady lights, although the water-line at this point is a little above proper level.

water up to its proper level when the fifth foot only has been passed, and that in testing such meters in this manner all indications previous to the passage of five feet must be discarded.

The meters which I have tested in the manner you requested are—

First.—A test-meter made by Mr. Wright, No. 7848, date 1855. This meter was expressly made for me by Mr. Wright as an experiment-meter, and is provided with three run-off plugs, intended, I presume, to secure perfect accuracy in the level of the water. On comparing its registration with the standard cubic foot established by law, I found that at the adjusted water-line it was 3·62 per cent fast, or, in other words, delivered only 0·9632, while the index registered one cubic foot. I therefore caused one of the run-off plugs to be lowered till the registration of the index agreed with that of the test-gasholder, leaving the two other plugs untouched.

Second.—A 3-light Parkinson's meter, No. 81,581, date 1857. This meter is, I believe, the property of your gas committee, and is the one upon which we experimented on the 24th ult., when we ascertained that it was 0·6 per cent. fast at the adjusted water-level, and fast in the following greater proportions when overfilled, viz.—

12·61 per cent. fast when overcharged with	. . .	25 cubic inches of water.
47·49 " " "	. . .	60 " "
5·1 per cent. slow when undercharged to the extent of		25 " "

For the reasons which I have before stated, I did not, however, consider it prudent in conducting these experiments to overcharge this meter with more than 55 cubic inches of water.

Third.—A 2-light Wright's meter, No. 5282, dated 1854. This meter was, I believe, lately fixed in an office in Manchester; it was tried by us on the 24th ult., when we found it to be 2·04 per cent. fast at the adjusted water-line, and 21·21 per cent. fast when overcharged with 24½ cubic inches of water; but, for the reason before stated, I limited the overcharge in my present experiments to 20 cubic inches.

Fourth.—A Crosley and Goldsmith's 3-light meter, No. 51,926 (Patent No. 4211); date, 1858. This is the meter referred to in the report of Messrs. Lowe and others of the 17th ult. as being 1·83 per cent. fast when passing gas at the rate of 5·89 feet per hour, and 1·67 per cent. fast when passing at the rate of 16·15 feet per hour, the mean being, in round figures, 1·75 per cent. fast, with an average consumption of 11 feet per hour. This meter I overfilled with 25 cubic inches of water in the first experiment, and drew off the same quantity in the second experiment by means of a cock which I had fixed specially at the back of the meter, and by which I could draw water direct from the measuring chamber.

My first experiment was upon the four meters connected together in the above-mentioned order, and continued for about 105 successive hours, with the following results:—

EXPERIMENT *No.* 1.—*Average Consumption*, 9·52 *Cubic Feet per Hour.*

Consumption by Test-Meter adjusted to the Legal Standard of Measure.	Consumption by Parkinson's Meter overcharged with 55 Cubic Inches of Water above the Run-Off Plug.	Consumption by Wright's Meter overcharged with 20 Cubic Inches of Water above the Run-Off Plug.	Consumption by Crosley and Goldsmith's Meter overcharged with 25 Cubic Inches of Water above the Run-Off Plug.
1000 cubic feet.	1390 cubic feet.	1185 cubic feet.	1018 cubic feet.

During the experiment Parkinson's meter lost nearly 5 cubic inches of water by evaporation, and the test-meter and Wright's each lost 2½ inches of water from the same cause, while the temperature of the gas at its entrance into the first meter was generally 3° Fahr. below that of its exit from the last meter. To arrive at absolutely exact results corrections must be made in the registration of the first three meters on both these grounds, and in that of the 4th on the score of temperature alone; but for the purpose you have in view I think these inconsiderable errors may be neglected in this report.

In the next experiments I reversed the positions of the test-meter and Crosley and Goldsmith's, so that I might see whether the rate of evaporation continued the same.

EXPERIMENT *No.* 2.—*Average Consumption*, 9·34 *Cubic Feet per Hour.*

Consumption by Crosley and Goldsmith's Meter with 25 Cubic Inches of Water drawn off from the Measuring Chamber.	Consumption by Parkinson's Meter with 25 Cubic Inches of Water drawn off below the Run-Off Plug.	Consumption by Wright's Meter with 14 Cubic Inches of Water drawn off below the Run-Off Plug.	Consumption by Test-Meter adjusted to the Legal Standard of Measure.
1012 cubic feet.	947 cubic feet.	977 cubic feet.	1000 cubic feet.

During the 107 hours over which this experiment extended, Parkinson's meter lost ¾ of a cubic inch of water by evaporation, Wright's meter 6/10ths, and the test-meter gained 1·4 cubic inches. The room was generally several degrees cooler than during the first experiment, the range of the thermometer during the former having been from 50° to 70°, and during the latter 67° to 73°. The last meter was exposed to a draught from an open window, which may account for the accumulation of water which took place in it during this experiment.

The last experiment was made upon the several meters in the same order charged to the adjusted water-level of each, and was continued for 90¼ hours under tolerably favourable circumstances for obtaining reliable results.

EXPERIMENT *No.* 3.—*Average Consumption*, 11·15 *Cubic Feet per Hour.*

Consumption by Crosley and Goldsmith's Meter charged to the Adjusted Water-Line.	Consumption by Parkinson's Meter charged to the Adjusted Water-Line.	Consumption by Wright's Meter charged to the Adjusted Water-Line.	Consumption by Test-Meter adjusted to the Legal Standard of Measure.
1014 cubic feet.	1008 cubic feet.	1018 cubic feet.	1000 cubic feet.

The test-meter had neither gained nor lost water during this experiment, but Parkinson's had lost four cubic inches and Wright's 2¼ inches; the temperature of the room had also varied from 59° to 73° Fahr.

I should have been glad to have continued these experiments long enough to have determined within what space of time the water in Parkinson's and Wright's meters would have become so reduced by evaporation as to close the valve and stop the supply of gas, but I shall be happy to do so if you consider it necessary.

I am, Sir, your obedient servant,

Robert Rumney, Esq., Manchester. THOMAS G. BARLOW.

The reading of the document was interrupted by Councillor LAMB, who thought it might be taken as read, while Alderman GOADSBY asked what was the use of their listening to a great deal of detail which would ultimately be useless, because the council had determined to refer the whole question to engineers of such standing that their decision would no doubt settle the question. (Hear.)

Councillor RUMNEY repeated that the matter had not been opened by himself.

Alderman SHUTTLEWORTH: Oh, yes!

Councillor RUMNEY had to establish what he had stated, that one of Parkinson's meters could register against the consumer 60 per cent., and he was determined to prove that. This had been denied, and he had therefore given this evidence. He (Mr. Rumney) had tried one of these meters at the gas office, and found it 28 per cent. against the consumer when the lights were steady. He explained that the difference in the experiments resulted from different circumstances. That the same results were not obtained at the gas office as elsewhere was owing to the large fittings and the burners being very near to the testing apparatus, and other circumstances different to what they were when the meter was in ordinary use. He had not the slightest doubt that there were scores, and no doubt hundreds, of Parkinson's meters in Manchester that would register up to the extent of 60 per cent. against the consumer in the ordinary circumstances in which they were placed. He had never been the counsel or the advocate of Mr. Crosley. (Oh!) He had not found that Mr. Crosley had made any statements that he could not verify.

A MEMBER: Then Mr. Taunton is not to be believed.

Councillor RUMNEY: Mr. Taunton lay under an imputation of making charges which he could not substantiate. He said that the meter was made for a particular purpose, but he had not proved it.

The TOWN-CLERK: He says Mr. Crosley told him so.

Councillor RUMNEY: He said in his report to the gas committee that the meter was made upon application, but he had not proved it. Mr. Crosley might have been injudicious in his treatment of the gas committee, but he was not the only one who had reason to complain, and the council did not know the difficulties Mr. Crosley had had to contend with. It was no new thing. A long time ago he brought his meter before the gas committee, and it was because he then found that there was no possibility of introducing his meter that he took the course he did. It had been stated again and again that Mr. Crosley refused to give the names of the parties whose meters he had examined, and from which he had extracted water. Mr. Crosley had given him (Mr. Rumney) the names, and he was prepared to make them public, with the names of the witnesses to the extraction of the water. Mr. Crosley stated that he was willing to give the information to the committee, and he had given it to him (Mr. Rumney) to make use of as he liked, and he had never had the opportunity.

Councillor ADSHEAD: He did not give it to the committee.

Councillor RUMNEY: No, but he was prepared to give it at any time, and Mr. Simpson or any one else could have it. Mr. Crosley had been charged with abusing the committee. This was denied. Mr. Rumney quoted the confirmation of a member of the council that language which he would not repeat had been used before the committee to Mr. Crosley. There was another thing which would explain a great deal of the apparent vindictiveness of Mr. Crosley and his treatment of the committee. Mr. Crosley did not seem to be a man who could be capable of dishonourable conduct. (Hear.) Mr. Crosley stated that after Mr. Cleminshaw had reported favourably of his meter, he said that, notwithstanding this, they would continue to use Parkinson's meter. This had been denied; but a gentleman who had no connexion either with the council or the gas committee, a perfect stranger, but a respectable man—a clergyman—heard Mr. Cleminshaw say so, and can vouch for it. (Hear.) He was bound to believe this, because it was given upon the evidence of a member of the gas committee who had a letter from the clergyman in which he stated that he heard this. This might explain, if it did not exculpate, Mr. Crosley for the use of language which, perhaps, in other circumstances, he would not have used, and which it was, perhaps, very injudicious, in a business sense, to use. He (Mr. Rumney) only wished that the best meter should be used—he did not care whose it was.* He had no interest in any body's meter; but he had felt bound to establish his point, that notwithstanding Mr. Parkinson said his meter could not deviate above 7 per cent., he (Mr. Rumney) found it to register 60 per cent. against the consumer, and give a steady light. (Applause.)

Several members rose. The MAYOR called upon

Alderman PILLING, who said that the question of meters had better be adjourned to that day twelvemonths. He did not conceive that the council or the public would hold the gas committee responsible for newspaper reports. (Hear.) Alderman Pilling gave a history of the making of the pits, which was substantially the same as we have already published; and he spoke very strongly in condemnation of the insubordinate spirit exhibited by some of their workmen. He contended that there was no proof as yet of want of ability on the part of the gas committee.

Councillor RAWSON said that, notwithstanding the deprecatory tone of Alderman Pilling's remarks, he cordially endorsed the opinion expressed by Councillor Neill as to the expediency of adding two or three capable members to the gas committee, but he must distinctly repudiate any aspersion upon that committee the members of which he believed had harder work than those of any other committee in the corporation.

Alderman CLARK could only say, after listening to Mr. Rumney, that Mr. Rumney had more faith than he could pretend to. (Laughter.) He begged the chairman, in kindness to himself, to let this discussion close. (Hear.) He thought harder measure had been dealt to the gas committee than they deserved, and nothing would induce him to consent to any motion, under any circumstances, that would be equal to a vote of censure of that committee. (Hear.) He would rather be a party to rescinding the resolution appointing the committee altogether; and he called upon gentlemen to consider what would be the consequence of throwing such a mighty concern into confusion.

Councillor LAMB said his firm conviction was, that if these kind of discussions were tolerated much longer, the gas profits would soon be very much reduced, if not altogether dissipated. He did not see why any member, and especially the new element of the committee, should bring such accusations and say that the committee was on its trial, on behalf of a person who had no interest whatever in Manchester but to sell his own meters. (Hear.) It was true he was somewhat like Demetrius of old: he might have sympathy with the Ephesians, but it was only because his own craft was in danger. (Laughter.) His conviction was, that the gas committee was entitled to most confidence of any committee in the council, for they had raised the concern from a state of bankruptcy to a state of unparalleled affluence, and had reduced the price of gas to one half what it once was. It used to be 10s. per 1000 feet. (Question.) If this was the kind of treatment that was to be given to members, he felt certain that those gentlemen who were worth keeping in the council would not remain, and no other gentlemen whose services were worth having would come into the council. (Question.)

Alderman HEYWOOD rose, and amid cries of "Vote," said he wished to call the attention of the last speaker to the mode of argument which he had just adopted, and wished him to bear in mind that whatever position Mr. Rumney might hold outside of that council, he was a member of the council, and as such, had as much right to bring forward questions affecting the interests of the council and its business as any other member. (Hear, hear.) Therefore he (Alderman Heywood) considered it exceedingly unwise—although he differed with Mr. Rumney on this question—to adopt such a mode of argument as that used by Mr. Lamb, and he hoped it was the last time they would hear it in the council. (Applause, and cries of "Vote.")

Councillor RYDER said he had tried to say a word or two for the last hour, and he never detained the council long. (Hear.) He should like to make one suggestion to the gas committee, and that was, to accept the resignation of Mr. Cleminshaw. He believed that by doing so they might infuse some new blood into the working department of the gas committee.

Alderman NEILL rose to order, and submitted that this was irregular.

Alderman SHUTTLEWORTH, in reply, asked to be allowed to refer to one circumstance mentioned by Mr. Neill, and that was, with regard to rumours which had been very generally prevalent that a member of the gas committee had, either by applications from himself or through his friends,

offered himself as a candidate for a situation which he thought was likely to become vacant, but which was not. He (Alderman Shuttleworth) thought it was desirable that all which was known upon this subject should be in some measure stated. The gentleman referred to had stated that he himself was not a candidate, but there was sufficient evidence to show that he had favoured the applications which had been made by his friends in his behalf in respect of the contingency which he thought would probably be realized —namely, that a vacancy would occur. One circumstance alone would induce him to believe, and he should be most happy if he could say that he did believe it, that he was not a candidate; and that circumstance was this, which he stated in order that the council might put such an interpretation upon it as in their judgments accorded with the circumstances that were known to them, and would be just to the individual. It had been stated that there was a very close division. [Alderman Shuttleworth thought that Mr. Rumney had made the statement; but was corrected.] He (Alderman Shuttleworth) as chairman had voted, and that made the votes equal on both sides, and then he gave the casting vote as a matter of course. This was upon the question as to whether Mr. Cleminshaw should be allowed a relaxation of six weeks, in order that the experiment might be tried as to whether such relaxation would restore him to a state of health to qualify him fully for the discharge of his great duties. This was objected to; an amendment was moved that the relaxation should not be allowed him—a faithful and a most valuable servant of fourteen or fifteen years' standing (No)—and against the recommendation of the sub-committee that had been appointed by the gas committee to consider Mr. Cleminshaw's letter. The amendment was only negatived in the way he (Alderman Shuttleworth) had stated; but that amendment was supported, and was actually voted for, by the individual who was said to be a candidate for the situation. Alderman Shuttleworth considered that this voting to make the situation void cast an imputation upon the propriety of the conduct of the individual referred to. (Hear.) With regard to the other matters, he thought Alderman Pilling had explained them. (Hear.) The excavation was an experiment. The committee decided upon employing their own men to make the excavation, instead of, as usual up to that time, letting the excavation by contract. It happened that he was abroad at the time, and remained abroad for two months, coming home ill, and therefore individually he was not at all responsible for the change which took place in the mode of doing this particular work. He believed, however, that he should have sanctioned this employment of the men as a means of linking them more intimately with the establishment. It was necessary, from the less consumption of gas in the summer, to discharge a great number of hands. They employed about 300 men. The meter question he thought they had had enough of. (Hear.) Certainly to his astonishment—the matter having been referred to competent engineers to make experiments and report to the council—they had again had a detail of the testimony which particular individuals made with regard to the inaccuracies that might be produced in Parkinson's meter. (Question.) Mr. Rumney would excuse him for saying that he had not very fully explained the results of his experiments upon his own meter. It would be in the recollection of the council that Mr. Rumney over and over again stated that he had found that his own meter at his own house would register 60 per cent. against the consumer.

Councillor RUMNEY: I never stated that.

Alderman SHUTTLEWORTH: Well, I am amazed at that contradiction. However, he has stated that this morning.

Councillor RUMNEY: Not of my own meter.

Alderman SHUTTLEWORTH said he found that there, as elsewhere, there was no possibility of binding some parties to their statements.

Councillor RUMNEY begged distinctly to call Alderman Shuttleworth to order. He had never stated that his own meter would register 60 per cent. against the consumer, but a meter, the number of which he had given.

Alderman SHUTTLEWORTH would take it then as Mr. Rumney stated it, and it saved him the trouble of informing the council what was the result of Mr. Rumney's own experiments upon his own meter, nobody interfering with him, and the result was not certainly that he could make the meter register 60 per cent. against the consumer; while thus endeavouring to make the meter register these high per centages against the consumer was not the way that anybody would treat a meter which they intended to make useful, but something very different. ("Question," and "Vote.") There was one thing which did not appear to be understood upon the meter question. The meters had been universally acknowledged to be imperfect. Parkinson's meter was imperfect, and the contrivance had been introduced of a side-plug which by its action would reduce the water down to the water-line, and so prevent a registration against the consumer, and something like general accuracy. That continued to be the best meter till very recently. The gas committee, who were aware of the imperfection of the meter, and its capability of registering erroneously, availed themselves of every opportunity to patronize and obtain one of more accurate construction. They availed themselves of an improvement which, by lowering the spout, rendered an inaccurate registration of above 2 per cent. impossible. They were rapidly introducing the improved meter when this question arose, but up to that time—and this was the point he wished to press upon the attention of the council—they used a meter which was universally acknowledged to be the very best meter that they had the opportunity of obtaining. They did, therefore, all that they could do, and ordered the improved meter whenever they had the opportunity of doing so.

The proceedings of the gas committee were then confirmed. This discussion, and the reading of the proceedings, lasted two hours.

Alderman HEYWOOD, in moving the adoption of the proceedings of the paving committee, playfully suggested that a "speaking meter" should be ordered. (Laughter.)

Alderman SHUTTLEWORTH remarked that such a machine would certainly register against the consumer. (Laughter.)

The council then proceeded to the consideration of the other business before them.

METROPOLIS GAS INQUIRY.

MEETING OF THE DELEGATES.

A Special General Meeting of the Delegates from the various Metropolitan Vestries and District Boards took place at the Marylebone Court-House on the 1st inst., for the purpose of making arrangements for a renewal of the campaign in the ensuing session of Parliament, in reference to the alleged gas monopoly and recent districting of the several London gas companies.

Mr. James Peacock, representative from Bloomsbury, was called to the chair, and the delegates present were—Dr. Bachhoffner and Mr. D'Iffanger, jun., from Marylebone; Messrs. Furniss, Austin, and Eldridge, St. Pancras; Mr. Collinson, St. George's, Southwark; Mr. Beal, St. James's, Westminster; Mr. Petter and Mr. Marshall, St. Martin's-in-the-Fields; Mr. Elt, Mr. Grant, and Mr. James, Islington; Mr. S. Hughes and Mr. Godson, Westminster District Board; Mr. Jackson and Mr. Tolcher, Wandsworth; Mr. Stratton and Mr. Watson, Lambeth; Mr. Steddall, St. Giles's; Mr. Aldridge and Mr. Jebb, Westminster District Board, &c. &c.

During the proceedings Mr. STEDDALL took an objection to the presence of the public press, on the ground that the gas companies should not be put in possession of the movements of the delegates, as they would leave no stone unturned to defeat the metropolis in its endeavours to abolish the gas monopoly.

Mr. Furniss, Mr. Austin, Mr. Beal, and others, strongly opposed such an attempt, and ultimately a motion, "that strangers withdraw," moved by Mr. Steddall, was withdrawn.

Mr. BEAL, in reply to questions, said that many of the vestries and district boards had already responded to the appeal of the managers of the proceedings before Parliament for funds. The Strand District Board had voted £100, the Vestry of St. James's £200, the Westminster District £200; St. Giles's and Bloomsbury had voted conditionally £250, and that morning the Vestry of St. George's, Hanover Square, which had never before taken part in the movement, had a motion before it to vote £100 for the object. St. Marylebone, St. Pancras, and eight or ten other parishes, had the matter still under consideration. Altogether about £950 had been promised. He believed that they would require altogether about £1500 to fight the battle before the Committee of the House of Commons. It was fully the impression of the managers that they could complete the investigation before the Committee of the House of Commons in something like twelve or fourteen days, unless the gas companies, who boasted that they had a fighting-fund of some £30,000 or £40,000, drove them into unnecessary evidence, and prolonged the inquiry to five or six weeks. They fully believed that they could fight the battle of the metropolis against this gigantic monopoly at the rate of £100 a day, and they had suggested to each of the vestries and district boards that a farthing rate would be amply sufficient, and be money well laid out in carrying this most important question to a successful issue. The scientific as well as other evidence they would be able to produce would, it was true, open a wide field, but it would make out such a case as he believed would prove irresistible before Parliament. (Hear, hear.)

Mr. COLLINSON thought a simple array of their grievances, as in the case of the water question, would be quite sufficient to establish the case of the metropolis in reference to the supply of gas—now become a necessary of life—instead of an array of counsel and engineers at the expense contemplated.

The CHAIRMAN said that plan had been already tried last session, but the gas companies applied to the committee to be permitted counsel, and they were told they could obtain an order of the house, which, no doubt, they would avail themselves of this session. The parishes would therefore be compelled to meet them. (Hear.)

The managers having made their report, their functions were considered at an end; but it was unanimously resolved that they be reappointed, with the exception of Mr. G. A. Young, who ceased to represent St. Pancras, being no longer a member of the vestry, and Mr. H. Farrer was elected in his place.

Mr. BEAL then moved, "That the managers now appointed be authorized to take all the requisite steps in the conduct of the parliamentary inquiry, to engage all requisite assistance and officials, and to take all such measures as they may deem necessary, provided always that no expense is incurred beyond the amounts from time to time subscribed by the various vestries and district boards."

Mr. PETTER seconded the motion, which was carried *nem. con.*

A resolution was proposed, calling upon the delegates of the respective vestries and district boards that had not already subscribed at once to resolve upon the question.

Mr. BEAL argued that the 92nd section of the Metropolis Local Management Act, as the municipal clause, gave powers to vestries and district boards to make grants for such a purpose, and cited the opinions of Mr. Toulmin Smith and Mr. Pashley in support of his views.

Mr. GREENWELL, the vestry clerk of Marylebone, expressed his doubts of the power of vestries to make grants in which other parishes or districts were to participate.

The motion was carried.

Dr. BACHHOFFNER called attention to a letter which had appeared in the *Morning Advertiser* of the previous day, stating that private subscriptions were being raised for this object. (No, no.) The metropolitan delegates had made no appeal for subscriptions to any other than public boards, and, therefore, if any private subscriptions had been asked for, it was a fraud. (Hear.)

Messrs. Beal and Hughes were re-elected honorary secretaries, Dr. Bachhoffner treasurer, and votes of thanks having been given to them and to the chairman, the proceedings terminated.

CONTRIBUTIONS FROM THE PROVINCES.

Extracts from Letters received by the Secretaries in answer to a Circular requesting information on the subject of Gas Supply, from various Town-Clerks and others in Great Britain and Ireland.

LINCOLN.

Letter from Mr. Henry Goddard, Town Surveyor, Aug. 12, 1858.

The lighting season commences Aug. 15, and terminates on May 15, giving 1800 hours of light. The charge for this was formerly £3. 3s. per lamp.

From March 12, 1857, the gas in public lamps has been burnt by meter, through 18 meters placed at various localities amongst the 329 lamps then in use.

	Feet.
First trial up to May 15, to which day the lamps were to burn 373½ hours, and should consume	614,243
Actual consumption by meter	516,258
Deficiency	97,985

In the next half year it was discovered that the servants of the gas company had substituted large burners on some of the meter lamps near the works, and the pressure was so great as to force more than 7 feet of gas per hour through the burners; and the glasses were thus being constantly broken.

The quantity of light is much greater than before the meters were tried, but the quantity of gas has never been 5 feet an hour. It is certain that a considerable public benefit has been derived from the meters.

Will forward result of his observations during the winter of 1858-9.

NORWICH.

Letter from Mr. H. B. Miller, Clerk to the Board of Health, dated Jan. 1, 1859.

The board has been negotiating with the gas company since July last, the company requesting an increase of 10s. per lamp on the whole 830 which

they supply in Norwich. The price at present paid is £3. 18s. 6d. per lamp, and the board, on the contrary, require a reduction of this price.

A copy of the *Norwich Mercury* accompanies Mr. Miller's letter, from which it appears that the consumption of public lamps by experiment is only 14,000 feet a-year. The report of proceedings at a meeting of the board contains a long correspondence, showing the greatest anxiety on the part of the board to adopt an equitable mode of testing the consumption, while, on the part of the company, every kind of evasion and manœuvre appears to be practised, in order to defeat the intentions of the board and extort an extravagant price.

PRESTON.

Letter from Mr. Robert Ascroft, Town-Clerk, dated Dec. 28, 1858.

When the Preston Gas Company was before Parliament in 1853, the corporation took steps to have the price limited, and stipulations inserted as to quality and quantity.

Price of gas limited to 4s. 9½d., with discounts of 10 per cent. and upwards, if account be paid within 21 days. Hence, for cash, the price would be to a small consumer 57½d. less 5½d., say 52d. or 4s. 4d. per 1000.

Offers to send copy of Act.

If corporation had not taken the steps they did, the charges, during the last two years, would have been much higher.

CAMBRIDGE.

Letter and information from Mr. J. H. Cooper, dated Town-Clerk's Office, Dec. 31, 1858.

Price paid by private consumers using their own meters . . .	£0	5	6
Ditto using the company's meters	0	6	0
Price paid for public lamps during the winter months from sunset to sunrise, *i.e.*, Sept. 1 to May 31	3	4	0
Ditto during summer months, June 1 to August 31	0	16	0
There is also paid as a compensation for breakage annually . .	35	0	0

All the lamps, brackets, pipes, and fittings belong to the company.

Extracts from Contract.—"Burners of public lamps to give a good, pure, and brilliant flame, not less than 3½ inches in width, and to consume at least 4½ cubic feet per hour.

"The commissioners, or their surveyor, may affix to any lamp or service-pipe, any portable test-meter, or other apparatus, for the purpose of ascertaining the quality or quantity of the gas consumed. To give notice to company before applying such test."

CHELTENHAM.

Letter from Mr. G. E. Williams, dated Public Offices, Jan. 5, 1859, enclosing "The Cheltenham Gas Act, 1856," in which the price of gas to private consumers is limited to 5s., and for public lamps to 4s. Mr. Williams states that the company charges these prices in full.

LANCASTER

Letters from Mr. R. Bond, dated Local Board of Health Office, New Street, Lancaster, Jan. 5 *and* 24, 1859—

Warns managers against the use of high syphon-pipes in meters.

Private consumers are supplied at a maximum price of 5s. 6d., and public lamps at 3s. 10½d. per 1000 feet.

Board of Health has power to test the gas at any time. Gas to be equal to 10 sperm candles, each burning 120 grains an hour.

The company finds the lamps, but the Board of Health keeps them in repair, and pays 1s. 6d. as annual rent for each lamp. The lamps are lighted on an average 2520 hours per annum.

Extract from Letter of Jan. 24, 1859.—"The gas company say the lamps consume 4 feet per hour, but I have been testing them lately, and I find they *never* consume more than 3 7/16 when the pressure is the greatest.

COVENTRY.

Letter from Mr. Thomas Browett, dated Town-Clerk's Office, Jan. 5, 1859, enclosing "Coventry Gas Act, 1856," and referring to clauses 46 to 55, in answer to questions contained in the circular.

By sec. 46 the company is to supply gas to the public lamps at the rate of £2. 10s. for each lamp, consuming 5 feet an hour, and burning 3100 hours a year. Such price to include the *erection*, cleaning, lighting, extinguishing, and repairing.

Sec. 50 fixes the price to private consumers at 4s. 6d. per 1000 feet.

Sec. 51 enacts that the gas shall be equal to 12 sperm candles.

EDINBURGH.

Letter from Mr. John Sinclair, Conjoint Town-Clerk, dated City Chambers, Jan. 6, 1859.

Edinburgh is lighted by two companies, but all the public lamps are supplied by one.

The price to private consumers is 5s. 10d. per 1000, less 5 per cent. discount to consumers over £20.

Public lamps charged as follows:—

Single jets . . .	15s.	Per 3926 hours, being the number of hours from sunset to an hour before sunrise throughout the year.
Double ditto. . .	25	
Batswing ditto . .	59	

STAMFORD.

Letter from Mr. R. Candall, dated Jan. 6, 1859.

The price of gas is 5s. 6d. per 1000 to private consumers, and £2. 13s. is paid for the public lamps, which consume on the average 4½ feet per hour.

NORTHAMPTON.

Letter from Mr. John Jeffery, dated Town-Clerk's Office, Jan. 7, 1859.

The price of gas was fixed by arbitration in the year 1850—Mr. Eunson for the gas company and Mr. Croll for the commissioners. The price fixed was 5s. for private consumers and 5s. 11d. for public lights, the company to find lamps, posts, &c., besides lighting, extinguishing, and repairing.

The gas to be equal to *nine wax candles.*

By the recent Act of 1858, which Mr. Jeffery encloses, the price is limited to 5s. for gas equal to 12 sperm candles.

Extract from Letter.—"The commissioners had an apparatus fixed for testing, but I have always felt that we were completely at the mercy of the gas company, both as to quality and quantity."

BRISTOL.

Letter from Mr. G. Heaven, dated Offices of the Local Board of Health, Jan. 7, 1859.

Price paid for gas by private consumers is 4s. per 1000, except in one or two cases of large consumers, where it is 3s. 9d.

The lamps burn on an average 9 hours 53½ minutes per night, besides the time required for lighting and extinguishing. The prices paid are as follow:—

	Price per Annum,
Burners consuming 5 feet per hour	£4 0 0
" " 7 " "	5 10 0
" " 2½ " "	3 0 0
" " 1 " "	1 16 0

Gas by Act equal to 10 sperm candles. Company certify its quality equal to 13 candles.

CROYDEN.

Letter from Mr. W. Drummond, Chairman of Local Board of Health, dated Jan. 7, 1859.

Is much obliged for report and pamphlets, which have been of great service, and in consequence some important stipulations have been inserted in recent contract with gas company.

CARLISLE.

Letters dated December 27 *and* 30, *and January* 7, *from Mr. John Nanson, Town-Clerk*, enclosing Abstracts of Receipts and Expenditure in respect of the Gas-Works which belong to the Corporation.

Price paid by private consumers, 4s. 2d. per 1000. Public lamps burn 330 nights, prices as follow:—

Single jets . . . . . 31s.	Corporation *erect* and keep in repair.
Flat flames . . . . . 42s.	
Batswings . . . . . 53s.	

The gas in Carlisle equal to 15 sperm candles.

Average price paid for coal, 10s. per ton.

Value of waste products from each ton of coal about 5s.

Only 7000 feet of gas made from each ton of coal.

CITY OF LONDON.

Letter from Mr. Wm. Haywood, Engineer to Commissioners of City Sewers, dated Guildhall, Jan. 8, 1859, and enclosing Copy of his Report to the Commissioners in 1853 on the subject of Public Lamps.

No measures taken hitherto to check consumption of street lamps, but he advised in 1853 that such measures should be taken.

The report contains a valuable table, showing the price charged by meter in the City of London ever since 1823, and the corresponding price charged for public lamps in each year.

Thus, from 1823 to 1827 inclusive, the price by meter to the private consumer was 15s. per 1000, and the price for public lamps, consuming 5 feet an hour, was £5. 5s.

In 1849 and 1850, price by meter only 4s. Price charged for public lamps, £4. 4s.

In 1851 and 1852 the lamps were taken by the Great Central Company at £3. 17s. 6d., but it is understood the price has been since raised.

DUBLIN.

Letter from Mr. William Ford, dated Town-Clerk's Office, Jan. 11, 1859.

The price to private consumers has lately been reduced to 4s. 9d. per 1000 feet, exclusive of meter-rent.

The following is the cost of public lamps:—

2800	at £3	1	8	contract made in 1845.	
167	"	3	10	2	" "
41	"	6	10	0	" in 1856, situate in the outskirts.
149	"	4	10	0	" in 1858, situate in a district before lighted very imperfectly.

Gas only specified to be best and purest.

Officer appointed under contract, in 1845, to test the gas.

Salary to be paid in equal moieties by commissioners and company.

Extract from Letter.—"The commissioners generally condemn this arrangement, which, however, must last until the termination of the contract."

MACCLESFIELD.

Letter from Mr. John May, Chairman of the Board of Health, dated Jan. 12, 1859, enclosing also Report of the Board of Health to the Town Council.

The public lamps are paid for at the rate of 39s. for 2400 hours.

They consume by contract 4 feet an hour, = 9600 feet a year.

The lamps are the property of the town.

The company clean the lamps, light, and extinguish. The parish repairs and paints.

From the report it appears that the price of gas to large private consumers is 3s. 9d. a 1000.

The report contains the price paid for public lamps in various towns in Lancashire and Yorkshire.

The Board of Health is insisting on a reduction of price for the public lamps, which the company will not accede to.

The board is consequently going to Parliament for power to supply gas themselves.

BELFAST.

Letter from Mr. James Guthrie, Town-Clerk, dated Town Hall, Jan. 12, 1859, enclosing Copy of Contract with the Belfast Gaslight Company, who fairly carry out the Provisions of the Contract.

From the contract it appears that the lamps are the property of the town.

Lamps to be lighted, extinguished, painted, and repaired by company.

Each lamp to be supplied with best No. 3 flat-flame burner, to burn whilst lighted not less than 4 cubic feet of gas per hour.

A governing cock to be attached to each lamp, under seal of the gas company and Town Council, to regulate consumption properly to 4 feet an hour.

That, from the extinguishing of the public lamps in the morning till they are lighted in the evening, the pressure shall not be less than half an inch at any period.

The lamps may be lighted according to a time-table annexed to contract, from which it is easy to calculate the number of hours per annum which each lamp is to burn.

The lighting is to be commenced every evening one hour before the hour at which they ought all to be lighted.

The price to be paid for each lamp under this contract is 45s.

The price of gas was formerly 5s. per 1000 to private consumers, with discounts on consumption exceeding 10,000 feet, but on the 1st of July, 1858, the price was reduced to 4s. 2d.

ROCHDALE.

Letter from Mr. Z. Mellor, dated Town-Clerk's Office, Jan. 8, 1859, enclosing Statistics of the Rochdale Gas-Works from 1846 to the present time.

The works in Rochdale belong to the corporation.

The price of gas has been reduced by the corporation from 7s. in 1844, to 4s. in 1858.

During the past year there have been 555 public lamps burning, on the

average, 2351 hours. The estimated consumption by public lamps is 4,821,637 cubic feet, = 3·7 feet per hour.

The price per 1000 feet charged for street lamps 3s. 6¾d. per 1000.

DUNDEE.

Letter from Mr. John Z. Kay, Engineer of the Gas Company, dated Gaslight Company's Office, 18, Castle Street, Jan. 13, 1859, enclosing statement by the directors of his company regarding the supply of gas to the public lamps of the town.

Under existing contract the company is bound to supply gas to public lamps at the price of 4s. 2d. per 1000 *hours, of a single jet burner, not exceeding 4 inches of flame.*

A table is quoted from a minute of the town commissioners, giving the net cost of gas supplied to the public lamps of the undermentioned towns:—Edinburgh, 3s. per 1000 feet; Glasgow, 3s.; Paisley, 4s. 6d.; Perth, 5s. 6d.; Arbroath, 5s. 2½d.; Montrose, 4s. 11½d.; Aberdeen, 5s. 10d.; Dundee, 5s. 11d., or 1s. 4½d. per 1000 in excess of 4s. 6¾d., the average price in the first seven towns.

Statements of the Gas Company.—The company shows in reply, that the average price per 1000 hours charged in these seven towns is 4s. 9¼d., while in Dundee it is 4s. 2d.

They are bound by the Act to supply gas to consumers generally at the average of the seven towns mentioned above.

In Glasgow the cost of lamps averaged 14s. 1½d., the lamps burning 3746 hours each.

In Dundee the price averaged 9s. 11¾d., lamps burning 2398 hours.

In Edinburgh, Glasgow, Montrose, and Aberdeen, the commissioners supply service-pipes for the public lamps; this costs 25s. each.

Price to private consumers, 5s. 6d. per 1000 feet.

Discount on accounts exceeding £5 and under £10, 2½ per cent.
" " of £100 and upwards 20 "

WALSALL.

Letters from Mr. Samuel Wilkinson, Jun., dated Commissioners' Clerk's Office, Jan. 10 *and* 14, 1859, enclosing accounts for 1857 and 1858; also a report and a handbill announcing a recent reduction in the price of gas.

The average price of coal per ton is 10s. 6d.

Each ton yields 8500 feet of gas.

Coke sold at 15s. per ton. Unscreened breeze, 3s. 3d. per ton.

Tar, 12s. per ton; and ammoniacal liquor 10s. per 1000 gallons.

The gas-works belong to the corporation.

The price by meter up to Michaelmas, 1858, was 4s. 8d. per 1000; but the handbill announces the following charges for the future:—

Consumers of less than 25,000 per quarter	3s. 4d.	per 1000.
" more than 25,000 and less than 100,000	3 0	"
" " 100,000 per quarter	2 10	"

The price of gas in Birmingham is 4s.

The illuminating power of the gas is equal to 12 sperm candles.

The price charged for public lamps £3.

AYR.

Letter from Mr. John Gray, dated Town-Clerk's Office, Jan. 14, 1859.

The price paid by the private consumer is 6s. 8d. per 1000 feet.

The gas company are under contract to light the public lamps at the rate of 12s. 6d. for each common jet burner, and 21s. for each union jet burner, annually; and to supply gas for extra lighting at the rate of 5s. per 1000 feet.

Extract from Letter—"We have no means adapted to ensure an adequate supply of gas, or to test its illuminating power."

BRADFORD.

Letter from W. H. Hudson, Town-Clerk, dated Town-Clerk's Office, Jan. 20, 1859.

Price paid by private consumers, 4s. per 1000.

Town Council contract with gas company to pay 48s. a year for each public lamp, the company undertaking to supply 4 feet of gas at the least per hour, and also to be at the expense of cleaning, lighting, and extinguishing.

SUNDERLAND.

Letter from Mr. Wm. Snowball, Town-Clerk, dated Town-Clerk's Office, Jan. 24, 1859.

The price paid for gas by private consumers is 4s. per 1000 feet, with discounts varying from 6¼ to 25 per cent.

The price paid for public lamps is £2. 16s. 3d. each per annum.

The following conclusions appear to follow from the preceding information, and from other facts which have come to the knowledge of the managers:—

1. That the prices at present charged to the private consumer in London are excessive.

2. That according to the practice adopted in numerous towns, considerable discounts, amounting in some cases to 30 per cent., are allowed to large consumers, and that public boards ought to benefit by this in the prices to be paid for public lighting, as their payments are mostly very large, and made with perfect regularity and certainty.

3. That in many cases the Legislature has fixed a distinct and much lower price for the public lighting than for the private consumer.

4. That whenever experiments have been made to test the actual consumption of the public lamps, the quantity is far below that which the company has contracted to supply.

5. That gas-works in the hands of corporations, where judiciously managed, have paid large dividends; or where the capital is borrowed, and a fixed rate of interest is paid, the surplus profit has amounted to large sums available for improvement, embellishment, and other public purposes, or for reduction of other rating.

6. That where corporations, or other public bodies, have the gas-works in their own hands, they manufacture better gas, having a higher illuminating power than that supplied by gas companies.

By order of the managers,

JAMES BEAL,
SAMUEL HUGHES, } Honorary Secretaries.

Offices, 209, *Piccadilly, and*
14, *Park Street, Westminster, January* 31, 1859.

GAS AND WATER SUPPLY OF COLCHESTER.

At a Monthly Meeting of the Town and Channel Commissioners, held on the 7th inst.—Mr. J. B. HARVEY in the chair—the supply of gas and water was taken into consideration.

THE PUBLIC LAMPS.

On the CLERK commencing to read the report of the sanitary committee—

Mr. WOLTON said it had come to the knowledge of Messrs. Joslin and Mills, the lessees of the Colchester Gas-Works, that certain experiments had been made by a person employed by the sanitary committee, with a view to test the quality and quantity of the gas consumed in the public lamps, and that a report upon the subject would be presented at the present meeting; but no intimation whatever had been made to them of the nature of such report, and he must say it would not be fair, especially in the case of such long standing and respectability, that a prejudicial report should be allowed to go forth to the public without their having the opportunity of accompanying it with some explanation. He was convinced that this board would not wish to take any advantage of that sort, and that, as Englishmen, if any attack was to be made, they would wish to give the parties affected by it an opportunity of answering the complaints against them.

Mr. CARR was not aware what would be the nature of the report, but as there seemed to be an impression that it would be prejudicial to the lessees, he concurred with Mr. Wolton that it ought not to go forth unaccompanied by their explanation.

Mr. BARNES quite agreed that this board should be very careful not to inflict injury upon anybody, but it should certainly not go abroad that the committee had been desirous of perpetrating such an injury unknown to the board. Complaints having been made from time to time of the imperfect lighting of the town, the committee were charged with the investigation of the matter, and they had very properly employed a competent person to test the quality and quantity of the gas supplied by the lessees under their contract. They were now prepared, in the ordinary course, to present their report; and it was for the board to say whether that report should be kept quiet, or whether it should be read, and share the same fate as every other report. If the latter course, it should be by a distinct resolution of the board; but he thought, as a public body, they should not stultify themselves by going out of the ordinary course, whatever individual might be affected by it.

Mr. WOLTON explained that he was not finding any fault with the committee or with the board. On the contrary, he thought the town was indebted to them for making the investigation; but what he said was, that as the lessees were their own townsmen, and of such long standing in the town, they ought to have communicated to them what charge was to be brought forward, in order that they might have furnished at the same time their answer or explanation.

Mr. BARNES said the committee had a certain duty delegated to them, and if they had gone out of their way to communicate the result of their inquiries to the lessees, they might have been censured for so doing.

Mr. FENTON reminded the board that this was not the first complaint against the lessees. They had been before the committee several times, and it was because no redress could be obtained that the present course was adopted.

The CHAIRMAN thought the committee had pursued the proper course in first submitting their report to the board; but if it was wished that the committee should confer with the lessees before it was made public, it would be better not to read it at this meeting, rather than, having read it, to request that it might not be published.

Mr. E. SMITH thought the committee had acted with great discretion. If there was a fault in the lighting of the town it was right it should be inquired into; and if the committee had communicated to the lessees the means they were about to adopt, the purposes of that inquiry might have been altogether defeated. He was quite sure the lessees would not knowingly do any thing that was not right, and that as business men, whatever defects there might be, they would be anxious to remedy them. He considered, therefore, that the report ought to be read.

Mr. WOLTON again explained that the lessees did not expect information as to what the committee were going to do; but after those steps had been taken, and the committee had obtained the information, he thought they ought to have been told the charge, so that their explanation might have been laid before the board at the same time as the committee's report.

Mr. CARR said he had no wish that the report should be suppressed, but that it should only be taken as an *ex parte* statement.

Mr. FENTON said the question was discussed in committee, but it was thought that they ought first to report to the board, and then it might be referred back to them to confer with the lessees.

Mr. TABOR thought it would have been irregular for the committee to have communicated with the lessees before making their report. It was merely a question whether the explanation of the lessees should accompany or follow the report, and pending that explanation the public would not prejudge the case.

The report was then read as follows:—

The committee having had under consideration the supply of gas to the town, considered it desirable to engage the services of Mr. G. Mills, of the South London Meter Office, Southwark, for the purpose of testing the quantity and quality of gas supplied to the public lamps, and have received from him the following report, viz.:—

South London Meter Office,
Borough Road, S.E., Jan. 17, 1859.

Gentlemen,—In accordance with the instructions received from your committee to ascertain the quality of the gas supplied to your town, also the quantity consumed in the public lamps, I beg to state that having made a series of tests, extending over three days, I find the gas, as to quality, to be perfectly free from sulphuretted hydrogen, but containing a considerable quantity of ammonia and carbonic acid, both impurities being objectionable—the former for its corrosive properties, and the latter for the tendency it has to reduce the illuminating power of the gas.

The illuminating power from a 15-hole argand burner with a 7-inch chimney, and consuming 5 cubic feet per hour, was equal in intensity to that of 13 wax candles burning 120 grains per hour. In obtaining these results I caused the darkened chamber in which I experimented to be hung with black cloth, and every care taken to avoid any reflected rays of light.

The rate of consumption in public lamps (excepting High Street) averaged 4 1-10th feet per hour, the lowest being one in Middle Mill Lane, which consumed 3 1-10th feet per hour with a pressure equal to a column of water 8-10ths of an inch; and the highest being No. 3 lamp, Mile End Road, which consumed 5 2-10ths feet per hour; the low rate of consumption arising, in some instances, in consequence of the small-size burners used (particularly the former lamps, and those in the neighbourhood of Eld Lane and St. John's Street), but the majority through the taps not being turned on sufficiently to give the quantity required by the contract. Those in High Street, from the Corn Exchange to the bridge, averaged 5 feet per hour.

To avoid any charge of unfairness in testing and averaging the consumption of the lamps, I took them consecutively in several thoroughfares, between the hours of six and nine p. m., being at a time when the largest amount of consumption was going on in the town.

With reference to the price, I have to state that, assuming the contract for the public lights to be fully carried out as to quantity, viz., 5 feet per hour per lamp, and taking into consideration the great distance the gas-works are from the principal portion of the lighting, thereby being compelled to keep up a much heavier pressure at the works, and consequently losing more by leakage than would be the case were they nearer, I do not think, under the circumstances, and from calculations I have made, the gas company could profitably supply the gas to the public lamps under the

present terms of contract, viz., 3700 hours, for a less sum than £3. 2s. per lamp, including lighting, extinguishing, painting, and keeping in repair; but I have no doubt that private consumers could be supplied with gas, equal in illuminating power to that now used in your town, and perfectly free from all impurities, at 5s. per 1000 cubic feet, and yield a fair profit to the manufacturer.

In conclusion, I beg to recommend for your future satisfaction that your surveyor (who now understands the mode of conducting the operation) be supplied with the necessary apparatus whereby he may at any time ascertain the quantity of gas consumed in the public lamps. I am, Gentlemen, yours obediently,

To the Lighting and Sanitary Commissioners for the Town of Colchester. G. MILLS.

After some further conversation it was resolved, on the motion of Mr. WOLTON, seconded by Mr. TABOR, that the report be referred back to the committee, with directions to furnish a copy thereof to the lessees, and to confer with them upon the matter.

THE WATER SUPPLY.

The Sanitary Committee reported that they had received the following letter from the manager of the Water-Works Company, but had deferred the consideration of the same for the present:—

Colchester Water-Works, Jan. 24, 1859.

Sir,—I beg to inform you, for the information of the commissioners, that it will not be practicable for this company, under existing arrangements, to supply the commissioners' carts with water during the ensuing season.

This determination has been forced upon the company not from inability to supply the required, or a very much larger quantity if needed, but from the commissioners' draught upon their mains being heretofore taken at a time when the public required their chief supply.

The consequence has been considerable derangement of the services in high and outlying places, with, of course, dissatisfaction on the part of some of the company's tenants.

The remuneration, also, has been wholly inadequate for the supply given under such conditions; indeed, I may say, has hitherto resulted in a considerable annual loss to the company.

The only present plan by which it appears the supply can be continued will be by the commissioners erecting tanks at various parts of the town, which the company may fill over night, and thereby allow of the commissioners' carts obtaining their supply as heretofore, but without derangement of the public services.

I should add that the company, under any circumstances, would desire to supply the commissioners by meter, in which case, if considered desirable, it would be an easy matter to afford a public supply to some of the poorest and most densely populated districts, where the ancient springs have become polluted or have failed altogether.

It has been considered right thus early to communicate with you, to give the commissioners ample opportunity to consider and determine upon their future arrangements. I remain, your most obedient servant,

W. H. BLAND, Manager.

H. S. Goody, Esq., Clerk to the Commissioners of Colchester.

At a later period Mr. TABOR drew the attention of the board to the great deficiency of water at the Hythe, where there is only one public pump, which is sometimes surrounded by fifty or sixty persons, and quarrels are of frequent occurrence, besides the serious loss of time entailed upon many. It had been ascertained that about midway of the hill there was an abundant spring within fourteen feet of the surface, and Mr. Tabor submitted a plan for carrying the water down the hill by means of a syphon-pipe with taps at intervals, from which the inhabitants might get a supply. It could be done for £40 or £50, and the annual expense would not exceed 50s.

In reply to a question, the SURVEYOR said there was a well near the spot with 10 feet of water, and it was said to be of excellent quality.

Mr. KENT thought they ought to be much obliged to Mr. Tabor for bringing the matter forward, and moved that the plan produced by that gentleman be referred to the sanitary committee.

Mr. BEARD seconded the motion, which was carried.

Mr. BROWN, the only dissentient, explained that he was opposed to all partial measures, but should like to see a tank of sufficient capacity on the top of Balkerne Hill, which could be filled from the present works, and conducted thence by gravitation to every part of the town.

The CHAIRMAN also remarked that when they should have got this water question into a proper shape, he hoped there would be no occasion to depend upon pumps, &c., but that they should be able to carry water into every house and cottage in the town, for until that was done he should not consider the supply efficient.

EMBEZZLEMENT BY A GAS COMPANY'S COLLECTOR.—At the sitting of the Central Criminal Court, held on the 31st ult., *John Hunt* pleaded guilty to a charge of embezzling different sums of money belonging to his employers, the Surrey Consumers' Gas Company, and was sentenced to eighteen months' hard labour.

THE DEPTFORD PUMPING-STATION.—At the last meeting of the Metropolitan Board of Works the Chairman was about to open tenders for pumping-engines and machinery for raising sewerages at Deptford station, when —Mr. Carpmael moved "That the tenders received for the pumping-engines and machinery be referred to the Main Drainage Committee, with instructions to call in such professional assistance as they may consider desirable; and that the committee do report to this board as to the best construction of engines and machinery for raising the sewerage at the Deptford station, and also as to which, if any, of the tenders should be accepted by this board."—Mr. Ware seconded.—Two or three amendments having been proposed, it was finally resolved, upon Mr. Wright's suggestion, that the reference should be simply for the committee to examine and report.

THE MANCHESTER GAS-METERS.—The following further correspondence between Mr. Crosley and the Manchester Gas Committee has been handed to us for publication:—

GAS DEPARTMENT.
Manchester, York Hotel Buildings, 53, King Street, Jan. 18, 1859.

Dear Sir,—The meter sub-committee are desirous that you should furnish them with a 3-light Crosley and Goldsmith's patent meter constructed as now supplied by your firm for ordinary consumers' purposes, and have requested me to make application to you for such a meter. Will you do me the favour to inform me on what day it will be convenient for you to send one?—I am, dear Sir, yours truly,

Wm. Crosley, Esq., Gas-Meter Works, 103, Southwark Bridge Road, London. THOS. PEACOCK.

Gas-Meter Works, 103, Southwark Bridge Road, London, Jan. 26, 1859.

Dear Sir,—I beg to acknowledge the receipt of your favour of the 18th inst., which arrived during my absence on the Continent, and which has rendered it impossible for me to send an earlier reply. I shall be happy to supply the gas committee, on behalf of my firm, with one of the patent meters upon being informed by you that they have rescinded their resolution to the effect that they were "unanimously of opinion that the further use of such meters cannot, with justice to the consumers, be hereafter sanctioned." While this resolution remains in force, it is clear that the meter I am, as a member of my firm, personally requested to supply cannot be fixed in the ordinary course of business; and if it is required for experimental purposes, I submit that it should be delivered direct to the referees who have been named by the gas committee to investigate the subject, in order to prevent the repetition of the "doctoring in the back shop" referred to by Mr. Haworth at the council meeting of December 1, 1858.—I am, Sir, your obedient servant,

Thos. Peacock, Esq., Gas Committee, Manchester. WM. CROSLEY.

Gas-Meter Works, 103, Southwark Bridge Road, London, Feb. 10, 1859.

Dear Sir,—I learn with much regret that the state of Mr. Lowe's health has not permitted him to undertake the meter examination which he, in conjunction with Mr. Hawksley, has been requested by the gas committee of Manchester to make; and, such being the case, I beg to propose that Mr. Barlow be appointed in his place, with the understanding that a third person may be nominated by them should they consider it advisable to call in the assistance of an umpire.

I shall be obliged by an early answer to this proposal, and am, dear Sir, yours faithfully, for self and firm,

Thos. Peacock, Esq., Gas Office, Manchester. WILLIAM CROSLEY.

GAS DEPARTMENT.
Manchester, York Hotel Buildings, 53, King Street, Feb. 11, 1859.

Dear Sir,—Your letter of yesterday's date was laid before the meter sub-committee at their meeting this morning, when I was instructed to inform you, in reply, that the gas committee are not desirous of receiving from you any suggestion upon the subject referred to.—I remain, dear Sir, yours truly,

Wm. Crosley, Esq., Gas-Meter Works, 103, Southwark Bridge Road, London, S.E. THOS. PEACOCK.

THE DUNDEE GASLIGHT COMPANY'S NEW TELESCOPIC GASHOLDER.—This company have now got their large new gasholder completed and tested. The directors visited the works on Wednesday last, for the purpose of inspecting the gasholder, and seeing it filled with gas, which was done to the satisfaction of all present, every part of the apparatus working admirably. After the inspection, David Baxter, Esq., opened the large main-valve leading to the town, and allowed the gas to pass for the first time along the main-pipes from the vessel. The directors of this company have now completed their extensions, and their works are in the best order, so as to meet the demand for gas for this rapidly rising town, and the present

Price Current.

CASTINGS, PER TON.

Average Weight of Cast-Iron Gas-Pipes, per Yard.

1¼ in.	2 in.	2¼ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lbs.

Retail Prices are 5 to 10 per cent. higher.	London.	Glasgow.	Newcastle.	Wales.	Yorkshire, Derbyshire, and Staffordsh.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Pig Iron, No. 1	4 10 0	2 14 0	3 0 0	4 0 0	4 5 0
1¼ and 2 inches Socket-Pipes	7 15 0	7 0 0	7 5 0	7 10 0	7 5 0
2¼ and 3 „ „	7 5 0	6 15 0	7 0 0	7 5 0	7 0 0
4 and 5 „ „	7 5 0	6 10 0	6 15 0	7 0 0	6 15 0
6 in. and upwards „ „	7 0 0	6 5 0	6 5 0	6 15 0	6 5 0
Retorts, 1st fusion, hot blast	6 15 0	...	6 15 0	7 0 0	6 15 0
„ 2nd „ cold „	7 15 0	...	7 0 0	7 5 0	7 0 0
Tank Plates, ⅜ thick and above	7 5 0	6 10 0	6 15 0	7 0 0	6 15 0

WROUGHT-IRON TUBING,

Subject to 40 per cent. Discount.

	2 in.	1½ in.	1¼ in.	1 in.	¾ in.	½ in.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent Welded Tubes, from 2 to 12 ft., perft.	1 8	1 0	0 10	0 7	0 5	0 4½
„ „ „ 6 in. to 18 in., each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting-Pieces, or Long Screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, Springs, and Elbows—wrought iron	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, wrought or cast	4 6	3 0	2 6	2 0	1 6	1 2
Iron Cocks	17 6	9 6	7 6	4 6	3 3	2 6
„ with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing Sockets, Caps, Plugs, and Plain Sockets [Nipples	1 3	0 9	0 8	0 6	0 5	0 4
Syphons, 2 quart	15 0	14 0	13 6	13 0	12 0	—

COALS, PER TON.

Newcastle.—Unscreened.		*Scotch Cannel.*	
Whitwell Primrose	6s. 3d.	Boghead, at Leith	32s. 0d.
Medomsley, Eighton Moor, and Burnhope	6 6	Kirkness, best	23 0
Pelaw	6 9	Capeldrae, 1st quality	20 0
New Pelton, Peareth, South Pelaw, Washington Hutton, and South Peareth	7 0	„ 2nd „	12 6
Pelton	7 9	Lesmahago, at Glasgow	25 0
Ramsay's Newcastle Cannel	16 0	„ „ Leith	27 6
		Arniston	22 0
		Wemyss	20 0
		Knightswood	18 0
		Pirnie	15 0

SUNDRIES.

Best Newcastle Fire-bricks	per 1000	60s.	0d.
„ „ „ clay	per ton	12	0
Cliff's Fire-bricks, at Wortley	per 1000	57	6
Ingham's Fire-bricks, at Wortley	„	55	0
Tough Cake Copper ... per ton	£112	10s.	
English Pig Lead ... „	22	15	
Welch Bar Iron, in London „	7	5	
Tarred Rope Yarn	per cwt.	26s.	0d.
Foreign Spelter ... per ton	£22	12	6
English Block Tin ... „	126	0	
Banca ... „	132	0	

FREIGHTS.

Coastwise—Newcastle.—Per Ton.		*Foreign.—Per Keel.*	
Chatham & Rochester	6s. 6d.	Boulogne and Calais	£9 0
Cork	9 0	Barcelona	22 0
Dover	7 0	Bordeaux	12 0
Dublin	9 6	Cadiz	13 0
Exeter Quay	9 0	Copenhagen	8 10
Folkestone	7 0	Dieppe	£9 to 9 0
Hastings	—	Genoa	22 0
London (Pool) ... 6s. 6d. to	6 9	Hamburg	7 10
Lowestoft & Yarmouth	5 0	Havre	10 0
Lynn	6 0	Leghorn	22 0
Portsmouth	7 6	Lisbon	15 0
Plymouth	8 6	Rotterdam	—
Whitstable	7 6	Stettin	8 10
Weymouth	—	Trieste & Venice	£21 to 23 10

addition will meet the increasing wants for a considerable time to come. The construction of the gasholder is what is termed telescopic, comprising two holders, one within the other, each having a lift of 25 feet. The inner or upper lift having risen 25 feet from the water-level, it then grips the outer holder or lower lift, when they both rise together to the height of 50 feet. The diameter of the holder is 100 feet by 50 feet high, and it will contain about 400,000 cubic feet of gas. The framing consists of twelve massive cast-iron columns, 52 feet in height, bound together at the top by twelve ornamental girdles, composed of cast and malleable iron bolted together (Horton's patent), combining great strength with lightness. The whole iron-work was contracted for by Messrs. Joshua and William Horton, Smethwick, near Birmingham, who sublet the large columns to Messrs. Gourlay Brothers, Dundee Foundry. The stone tank in which the holder is immersed was contracted for by Messrs. Doig and Anderson, Carnoustie, and is of hewn ashler, every joint being closed with a dovetail, filled in with Roman cement, no puddle being used. It contains about 1,300,000 gallons of water, and took nine days to fill from various sources during the late rains. The whole was constructed under the superintendence and from the plans and specifications of Mr. J. Z. Kay, the able engineer of the company.

Advertisements.

ADDISON POTTER,
WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of Clay Retorts, Fire Bricks, and every description of Fire Clay Goods.

CEMENT.

G. and T. EARLE, Hull, beg to draw the attention of Gas and Water Companies, Engineers, and Contractors, to their Light Cement, for Stuccoing and Building Gasholder Tanks, and Jointing Iron Pipes, for which purposes it will be found a very superior article.

JOHN ROGERSON and CO.,
NEWCASTLE-ON-TYNE & MIDDLESBRO'-ON-TEES.
Wrought and Cast Iron Pipes, Cast-Iron Retorts, and all kinds of Foundry Work necessary for Gas-Works. Fire-Bricks and Clay Retorts. Gas Coals of every description. Pig, Bar, and Plate Iron.

ROBERT MACLAREN and CO.,
EGLINTON FOUNDRY, GLASGOW,
Manufacturers of all sizes of Cast-Iron Main Pipes, by an improved Patent. General Ironfounders, Gas Engineers, and Wrought-Iron Tube Makers.

WHITEHOUSE and CO., Boiler and GASHOLDER MAKERS,
GLOBE PATENT TUBE WORKS,
WEDNESBURY,
Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the Kingdom.
Orders promptly executed.

THE PURIFYING-HOUSE SUPERSEDED.

MR. LAMING (Inventor of the Revivified Oxide of Iron Purification) has the satisfaction to announce that Gas may now be purified in a manner that combines unusual commercial advantages with all the possible requirements of the sanitary officer and the public. All that need be said to call attention to the new process is, that instead of the purifying-house, two vessels of small area, placed after the condenser, suffice; that these vessels never have the least communication with the atmosphere; and that neither lime, oxide, nor any other substance foreign to the gas itself is brought into contact with it. Gas engineers will perceive among the advantages thus offered, economy in room, labour, and materials; impossibility of nuisance; and total absence of injury to the illuminating power.
Particulars by addressing RICHARD LAMING, 118, FENCHURCH STREET.

M. SHEEN, Gas and Railway Lantern Maker, 90½, Holborn Hill, begs to inform Managers of Gas-Works, &c., that she continues to contract and supply Lanterns on reasonable terms, and keep them in repair by the year.

GEORGE ANDERSON, Gas and CONSULTING ENGINEER,
104, LEADENHALL STREET, LONDON (E.C.).
DIRECT-ACTING GAS-EXHAUSTERS,
supplied either with or without Steam-Engines and Boilers.
FOUR-WAY DIAPHRAGM VALVES,
one of which answers the purpose of THREE ordinary Valves, as applied to Purifiers, or in shutting off and passing Station-Meters, Governors, or other apparatus, while the Connecting-Pipes are also much simplified.
RETORT SETTINGS,
designed to be heated by Tar alone, and with a total absence of Smoke.
Illustrated circulars, giving references and every information, may be obtained on application as above.

PATENT FLEXIBLE GAS TUBING,
VULCANIZED INDIARUBBER HOSE-PIPES,
WASHERS, PACKING, &c.

JAMES LYNE HANCOCK begs to announce a considerable REDUCTION in PRICE of his PATENT VULCANIZED INDIARUBBER TUBING.
VULCANIZED INDIARUBBER AIR-TIGHT BAGS, any size, for Gas Mains, with flexible tubes attached, and fitted with stop-cocks complete.
Manufactory and Warehouse, No. 6, Goswell Road, LONDON (E.C.).

NOW READY,

VOL. VII. of the JOURNAL of GAS LIGHTING, WATER SUPPLY, and SANITARY IMPROVEMENT, for 1858, price 21s., bound in cloth and lettered. A few copies of Vols. II., III., IV., V. and VI. are still on sale.
W. B. KING, 11, Bolt Court, Fleet Street.

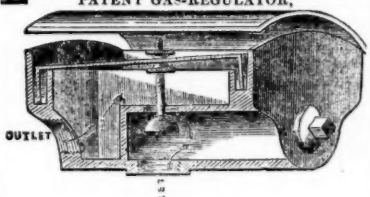
By Royal Letters Patent.

KAY'S Patent Equitable Gas-Meter is the most effective preventive of fraud by "tilting," and is as simple in construction as the common meter.
Manufactured only by
W. COWAN,
60, BUCCLEUCH STREET,
EDINBURGH.

J. CLIFF'S Fire Bricks, Clay RETORTS, &c.

Orders for London and South of England to be addressed to Mr. NEWTON, Agent for the District, 13, Westbourne Terrace, BARNSBURY PARK (N.).
N.B.—A few Retorts of each size, and a large stock of Bricks and Lumps, always on hand at the above Wharf.

ESPLIN'S, commonly called Judkin's PATENT GAS-REGULATOR,



Is manufactured solely by
THOMAS LAMBERT and SON, Short Street,
New Cut, Lambeth, LONDON,
And is by them supplied wholesale at the following prices:—

½-in. for 5 lights, 15s. 6d.	¾-in. for 10 lights, 25s. 6d.	1-in. for 20 lights. 34s. 6d.
1¼-in. for 30 lights, 48s.		
1½-in. for 60 lights, 65s.	2-in. for 100 to 150 lights, 93s. each.	

A saving in the consumption of Gas of from 20 to 25 per cent. is effected by the use of this Regulator.
A liberal discount allowed to the Trade.

BENJAMIN GIBBONS, Jun.,
DEEPDALE FIRE-CLAY & BRICK WORKS,
Near DUDLEY,
Manufacturer of every description of Fire-Bricks, Lumps, Quarries, Shields, Flue Covers, &c., to any size or shape required.
FIRE-CLAY RETORTS,
TO MODEL OR DRAWING.
B. G. begs to call the attention of Gas Companies to his Fire-Clay Retorts, which have been used with great satisfaction in some of the largest Gas-Works in the Metropolis and many Provincial Towns in England.
References given, if required.

BRYAN DONKIN and CO.'s improved GAS VALVES have been adopted by numerous Gas Companies in England and abroad, and their advantages and great security fully proved. Very large numbers are in use. Prices from 11s. 6d. to 13s. 6d. per inch diameter.
BRYAN DONKIN and Co.,
Engineers, near Grange Road, BERMONDSEY.

ALFRED PENNY, Engineer,
WENLOCK IRON WORKS,
WHARF ROAD, CITY ROAD, LONDON.
Mr. PENNY begs to inform Gas and Water Companies that he undertakes the erection of new, or the alteration of existing, works; and that he may be consulted generally on all matters connected with gas and water supply. He is also prepared to supply best Cold-blast Retorts, Socket-Pipes, and Connections, Iron Borings, &c. &c., and all the necessary Castings used in Gas and Water-Works.
*** Country orders executed with care and despatch.

WILLIAM RYDER, General MINERAL AND METAL AGENT AND MERCHANT, 4, DEAN STREET,
NEWCASTLE-ON-TYNE,
is prepared to supply Gas and Water Companies with Apparatus and Appliances of every description, including Cast and Wrought Iron Goods, Coals, Fire-Bricks, Retorts, &c. &c.
Any communications addressed to him as above shall have prompt attention.

THE GREAT CENTRAL GAS CONSUMERS' COMPANY.
Just Published,
A FULL Report of the Proceedings on the ARBITRATION between A. A. CROLL, Esq., and the GREAT CENTRAL GAS CONSUMERS' COMPANY. Before C. MAY, Esq., C.E., F.R.S., and THOMAS G. BARLOW, Esq., C.E., Arbitrators, and C. HOGGINS, Esq., Q.C., Umpire.
Reprinted from the *Journal of Gas Lighting, Water Supply, and Sanitary Improvement.*
Price 5s., bound in cloth.
A few Copies are on Sale, bound up with the Proceedings before the Parliamentary Committee on the Company's Bill in 1850—price 7s. 6d.
W. B. KING, Office of the "JOURNAL OF GAS LIGHTING," &c., 11, Bolt Court, Fleet Street, LONDON, E.C.

WROUGHT-IRON Guides for Gas-holders.—Designs and Working Drawings for Trussed Wrought-Iron Guides and Frames can be obtained of CHARLES DIXON, C. E., Chichester, SUSSEX.

WALTER MABON, Engineer,
ARDWICK IRON WORKS, FAIRFIELD STREET,
MANCHESTER,
Manufacturer of
IRON TANKS for Gasholders, Railway Stations, &c.
GASHOLDERS.—Extensive premises at Gorton, solely for the manufacture of Gasholders, and other heavy Wrought-Iron Structures.
GAS APPARATUS.—W. M. has an extensive assortment of patterns for Purifiers from 4 feet to 15 feet square, also round ones from 4 feet to 10 feet diameter; Scrubbers, Condensers, Washers, Columns, Girders, and Tripod Patterns, suitable for Gasholders, from 10 feet to 150 feet diameter, either Single-lift or Telescope. Contractor for Gas Works of any Magnitude. Designs, Specifications, and Estimates furnished.
WROUGHT and CAST IRON ROOFS for Railway Stations, Gas Works, Warehouses, and Sheds, prepared for Slates or for Corrugated Iron.
IRON HOUSES, either for Dwellings, Manufactories, or Public Buildings.
PIPES and VALVES, for Gas and Water, from 2 inches to 48 inches bore.

WEST and GREGSON, Gas-Meter MANUFACTURERS, &c.
UNION STREET, OLDHAM.
Station and Experimental Meters, Gas Pressure Registers, Gauges, Experimental Gasholders, Governors, Slide Valves, &c. &c.
W. and G. would respectfully call the attention of Gas Engineers and Managers to their Station-meters, having made and erected the largest in use at the present time, two of which may be seen at the Stockport and Liverpool Gas Works, on application to the respective Engineers.

TO THE GAS COMPANIES
OF GREAT BRITAIN AND THE CONTINENT.
CANNEL AND COAL FOR GAS PURPOSES.—Fifteen years' connexion with one of the largest Gas Concerns in England, enables us from practical experience to certify that the CANNEL and COAL we offer are those best suited for Gas purposes.
On application, we shall have much pleasure in forwarding our Tabulated Statements of Analyses, with Prices and Terms; also References as to respectability.
All Contract Orders have our careful and best attention.
EMANUEL TURNER and Co., Exporters of Cannel and Coal, 34, Castle Street, LIVERPOOL.

EDWIN DIXON,
WOLVERHAMPTON PATENT WROUGHT-IRON TUBE WORKS
Originally established in 1833,
Manufacturer of Gas and other Tubes, Fittings, and articles of every description belonging to Gas, Water, or Steam.
E. D. had the honour of receiving the
PRIZE MEDAL
awarded to this Manufacture by the COUNCIL of the GREAT ENGLISH EXHIBITION of 1851; and from the latter date has supplied many towns exclusively with GALVANIZED and other Tubes for Gas and Water, under GOVERNMENT ENGINEERS.
A City, containing 150,000 inhabitants,
has recently been entirely supplied with Tubes made at the above-named Works, and several others with populations nearly as great; in fact, the reputation now acquired induces this notice to the public.
Large Stocks generally on hand, averaging from one to three hundred thousand feet.
HYDRAULIC PRESS TUBES,
to resist 6000 lbs. and upwards to the square inch, extensively manufactured.
STOCK DIES and SCREWING TACKLE,
of the best possible description.
Every Tube carefully tested with Hydraulic Pressure before leaving the Works.

WILLIAM PARKINSON AND CO.,

(SUCCESSORS TO THE LATE SAMUEL CROSLEY,)

COTTAGE LANE, CITY ROAD, LONDON,

Beg to announce that, in addition to the Manufacture of

GAS-METERS,

they continue the Manufacture of

METERS FOR MEASURING WATER, SPIRITS, &c.,

commenced, under Patent in 1849, by the late Mr. William Parkinson.

These Meters are as simple and durable as the Gas-Meter, and as correct as that instrument in the registration of the fluids passing through them.

By Her Majesty's Royal Letters Patent.

JAMES MEACOCK,

PATENT DRY and IMPROVED WET GAS-METER WORKS,

7, SNOW HILL, AND 16, WEST STREET, LONDON.

ESTABLISHED 1836.

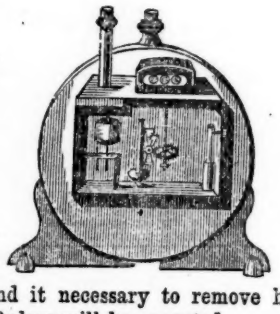
J. MEACOCK begs to call attention to his patent method of securing the Leather diaphragm of his Dry Meter. Instead of using the soldering iron for this purpose, it is held between two flat Metal Rings, and screwed up sound to a metal frame, as shown in the drawing.

By this improvement the perishing effect of hot tools to leather being avoided, its durability must be longer; also, its repair when needful is most simple, as a new leather diaphragm can be applied by merely unscrewing the old one from the rim or frame to which it had been screwed up.

Meters of Gas Companies being subject to so much wear and tear, J. M. begs leave to assure those who may honour him with their commands, that nothing but the stoutest materials for cases, the hardest gas-resisting metals, and best foreign leather for the interiors, will be used, and none but first-class workmen employed in their construction.

Wet Gas-Meters Repaired and Reconstructed with J. Meacock's Modern Improvements.

METERS SENT ON APPROVAL.



In consequence of the great demand for the above Meters, J. Meacock has found it necessary to remove his Manufactory to more extensive Premises, 16, West Street, Smithfield, where Orders will be executed on the shortest notice.

EDWARD COCKEY & SONS'

PATENT GAS VALVES.

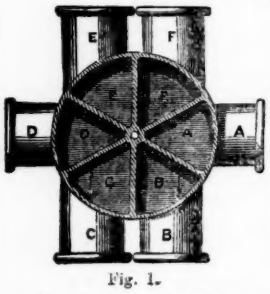


Fig. 1.

THESE Valves are formed of two cast-iron cylinders, with segmental divisions, having faces ground gas-tight, the upper cylinder turning horizontally on the lower one.

The lower cylinder has pipes from each division communicating with the vessels to and from which gas is to be passed. The upper cylinder has corresponding divisions, so arranged as to direct the passage of gas to the different segmental divisions in the lower part, and when it is turned on the face of the lower one to alter the flow of gas from one vessel to another.

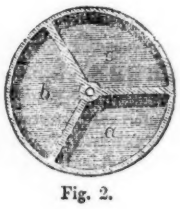


Fig. 2.

Fig. 1 shows the Valve prepared for two purifiers, in which, by turning the upper cylinder, Fig. 2, the Gas is directed to either purifier separately.

Another arrangement is just completed for two purifiers, by which the Gas may be directed through both purifiers together, entering either first, or through either purifier separately. The advantages of this arrangement will be too manifest to Gas Manufacturers to need comment.

The Valves are manufactured by the Patentees at their

IRON WORKS, FROME SELWOOD.

The following Testimonial has been received from an eminent Engineer:—

Gaslight and Coke Company's Office, Cheltenham, Jan. 17, 1859.

Messrs. Cockey and Sons, Frome.

Gentlemen,—The Patent Purifier Centre Valve which I had fixed instead of the common hydraulic valve for one of our sets of purifiers with 9-inch connexions, I am happy to say continues to afford satisfaction both to myself and to the workmen who have the charge of it.

I am, Gentlemen, yours truly, W. ESSON.

EDWARD COCKEY AND SONS

ALSO MANUFACTURE

PURIFIERS, SCRUBBERS, CONDENSERS, AND OTHER IMPROVED GAS APPARATUS,

HAVING PATTERNS SUITABLE FOR GAS-WORKS OF DIFFERENT SIZES.

FIRE-CLAY GAS RETORTS.

ESTABLISHED IN 1795.

JOSEPH CLIFF,

WORTLEY FIRE-BRICK WORKS, near LEEDS.

THESE RETORTS are unrivalled in excellence, being the BEST FINISHED INTERNALLY, and THE MOST CORRECT IN FORM, of any in the Kingdom. From the peculiar composition used in working up the face of the material, they are rendered unusually smooth, close, and FREE FROM SURFACE CRACKS, thus, in a great measure, preventing leakage and the adhesion of carbon to their interior surface.

To meet the yearly increasing demand of UPWARDS OF THIRTY SEASONS and to carry out the late improvements in the manufacture, the Premises have been re-erected and much enlarged, and Engineers may rely WITH CONFIDENCE on their orders being completed with a greater regard to despatch than by any other House.

THE WORKS ARE WELL SITUATED

For EXPORT from the Ports of { LONDON, LIVERPOOL, HULL, MIDDLESBRO', HARTLEPOOL, and STOCKTON.

FIRE-BRICKS, LUMPS, GUARDS, TILES, AND CLAY OF THE SAME QUALITY.

M. B. NEWTON, London Agent, No. 4, Wharf, King's Cross Goods Station.

BIRTLEY IRON WORKS,
CHESTER-LE-STREET,
DURHAM.

Manufactory for every description of Casting and Machinery for Gas Works and Water Works.

Warehouse in London for Cast-iron Pipes and Connections of all sizes and in any quantity, Scott's Wharf, Bankside, Southwark.

Office in London, Mr. E. M. PERKINS, 78, Lombard Street.

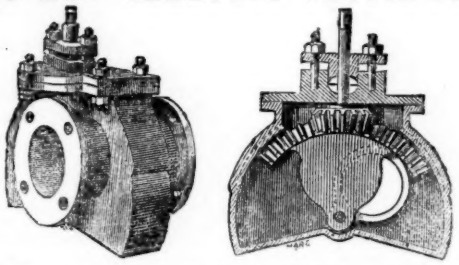
HARRIS and PEARSON,
PROPRIETORS OF
BEST GLASS-HOUSE POT AND CRUCIBLE CLAY.
MANUFACTURERS OF
FIRE BRICKS GAS RETORTS &C.
AMBLECOTE FIRE CLAY AND BRICK WORKS,
STOURBRIDGE.
Late in the occupation of I. and W. King.
Originally J. Pidcock, Esq.

GEORGE CUTLER, Gasholder MAKER,

No. 8, WENLOCK-ROAD, CITY-ROAD, LONDON.

Contracts for Tanks, Gasholders, Roofs, Purifiers, and all descriptions of Gas Apparatus executed on the most reasonable terms. Improved Slide Valves, Steam, and Range Boilers, and Smiths' Work, of the best materials and workmanship.

BEST AND CHEAPEST SLUICE-COCK.



BROWN AND MAY'S PATENT.

Above 3-inch diameter, price 10s. per inch. Brass face, 6d. per inch extra.

Can be taken to pieces without being removed from the line of Piping.

NORTH WILTS FOUNDRY, DEVIZES.

Wholesale Agents, Messrs. S. and E. RANSOME, 31, Essex Street, Strand, E.C.,
Where a Sample may be seen.

"ALL DOUBTS REMOVED."

DEFRIES' celebrated Dry Gas-METERS, of which there are 80,000 in use in Palaces, Churches, Chapels, Royal Dock-yards, Club Houses, Public Offices, and other buildings throughout the Empire, the Continent, and Colonies.

His meter for 1500 lights, in use upwards of ten years at the Royal Italian Opera, until that building was destroyed by fire, was long afterwards dug out of the burnt ruins, then tested by the Chartered Gas Company and found inflexibly correct.

On the 9th of June, 1858, at the Western Gas Company, his meter for 150 lights, after considerable use, was doubted, and subjected to the most variable tests, from the full lighting down to a single jet, and in each case, as in numerous other instances, accuracy was finely indicated.

His two large meters at the Thames Tunnel have been in constant use day and night for upwards of twelve years (one continuation of dark hours), subjected to the wear and tear of 75 years, as compared with the ordinary hours of using gaslight above ground.

Gas Companies honouring Mr. Defries with their commands for his PATENT DRY METER, which has done so much service in simplifying the fitting up of gas, as well as checking surreptitious burning, will be guaranteed perfection for five years free of charge.

Defries' Prize-Medal Gas Baths, Gas-Cooking and Heating Stoves. The Polytechnic Gas Fire, with indestructible fuel, in daily operation (Saturday excepted) at the Office, 406, Euston Road, Fitzroy Square, LONDON.

LIVESEY FIRE-CLAY WORKS,

NEAR BLACKBURN, LANCASHIRE.

ORLANDO BROTHERS,

MANUFACTURER OF PATENT CLAY RETORTS,

AND EVERY DESCRIPTION OF

TUBULAR GLAZED SEWERAGE PIPES, BENDS, JUNCTIONS ETC.

FIRE-BRICKS, TILES, BLOCKS, AND CHIMNEY-TOPS.

WILLIAM INGHAM AND SONS,

WORTLEY FIRE-BRICK AND RETORT WORKS,

Near

Leeds.

W. INGHAM and SONS, having for many years been extensively engaged in the Manufacture of

RETORTS AND FIRE-BRICKS FROM THE CELEBRATED WORTLEY FIRE-CLAY,

beg to call especial attention to their RETORTS, which have for many seasons proved to be unsurpassed in quality by any in the Kingdom, their FREEDOM FROM CRACKS and the ADHESION OF CARBON rendering them worthy the attention of all parties interested in the making of Gas.

The Works are of such magnitude as to ensure the prompt execution of orders to any extent.

Estimates for Setting, or Bricklayers sent when required.

GAS OVENS IN SEGMENTS OF EQUAL QUALITY.

London Agents: CHADWICK and AKEROYD, Willington Stone Wharf, Regent's Park Basin.

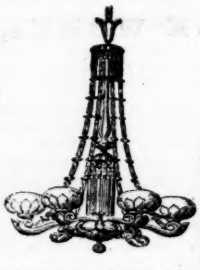
A large stock of Fire-Bricks, Fire-Clay, Terra Cotta, and Drain-Pipes of all sizes kept in London at CHRISTIE & CO.—Wharf, 64, Bankside, Southwark, where all particulars of Prices, &c., may be obtained.

N.B.—*Export orders continue to have prompt attention.*

ALEXANDER WRIGHT,

GAS ENGINEER, MANUFACTURER OF GAS-METERS, GOVERNORS, AND EVERY DESCRIPTION OF GAS APPARATUS,
55, MILLBANK STREET, WESTMINSTER.
CONSUMERS' METERS at the List Price, with a Liberal Discount to Wholesale Purchasers.
THOMPSON'S BROMINE TEST, £1. 1s.—BROMINE, 3s. per Ounce.
BISULPHURET OF CARBON TEST, £2. 2s.
APPARATUS FOR DETERMINING THE HEATING POWER OF SAMPLES OF COAL AND OTHER DESCRIPTIONS OF FUEL, £5. 5s.,
INVENTED BY LEWIS THOMPSON, Esq., M.R.C.S.
REGISTERING PRESSURE GAUGE, Net Price, £8. Glass Shade, 10s. extra.
STATION METERS, PRESSURE GAUGES, PHOTOMETERS, SPECIFIC GRAVITY APPARATUS, &c.

JAMES OAKES and CO.,
ALFRETON IRON WORKS, DERBYSHIRE,
AND
WENLOCK IRON WHARF, 20, WHARF ROAD, CITY ROAD, LONDON,
Beg to inform Gas and Water Companies and the public, that they keep in stock in London all the CASTINGS in general use in Gas and Water Works, including best cold-blast Iron Retorts, Socket and Flange Pipes of all sizes, Bends, Branches, Syphons, Lamp Columns of various patterns, &c.
N.B.—Orders for Cast-iron Tanks, Girders, Columns, Cylinders, and all irregular castings, will have immediate attention.
CHARLES HORSLEY, Agent.
C. H. is prepared to carry out the warming and ventilation of public buildings, &c.; also civil engineering in general.

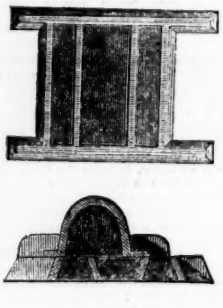


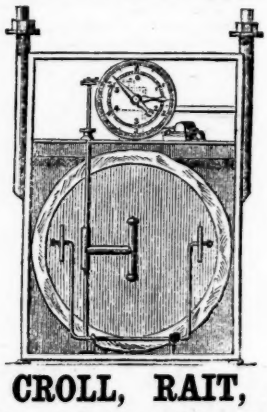
F. & C. OSLER,

44, OXFORD STREET, LONDON;
Manufactory—Broad Street, Birmingham—Established 1807,
MANUFACTURERS OF GLASS CHANDELIERS, GLASS LUSTRES, TABLE GLASS, &c. &c.
ELEGANT CRYSTAL GLASS CHANDELIERS, for GAS, from £4 upwards (Made from "REGISTERED" DESIGNS), with GLASS BRANCHES, &c.; suitable for DRAWING-ROOMS and BALL-ROOMS. The more extensive use of GAS in private dwellings has induced Messrs. OSLER to direct their particular attention to the manufacture of this class of articles—which, with a view to their general adoption, are offered at very moderate prices. Purchasers can select from a great variety of patterns, to which additions are being constantly made.
THEATRES, CONCERT, ASSEMBLY, AND BALL ROOMS LIGHTED BY ESTIMATE ON THE LOWEST TERMS.

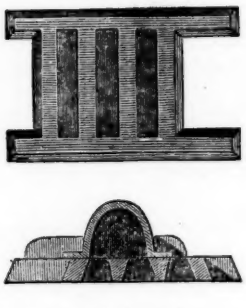
CROLL'S
PATENT IMPROVED DRY GAS-METER,

NEW VALVE.





OLD VALVE.



Manufactured by CROLL, RAIT, and CO., LONDON.
FACTORY—Canal Bridge, Kingsland Road, N.E.

Messrs. CROLL, RAIT, and Co. beg to draw the attention of Gas Companies to the Removal of their Manufacturing Business from Blundell Street to the Kingsland Road, where they request that orders for Meters, or returned packages, may be sent.

In consequence of the peculiar facilities which the new premises afford for the Manufacture of Meters, Croll, Rait, and Co. can promise with great confidence immediate attention to all orders they may be favoured with.

The Meters manufactured by Croll, Rait, and Co. have met with a large amount of patronage—the Alteration in the Valves having been pronounced to be a simple but great improvement.

Mr. Croll is the Sole Proprietor of Patent Rights for this Meter in America, and Mr. John O'Neil, of Boston, U. S., is the Firm's Agent.

Gas Companies ordering these Meters may rely upon obtaining Durability combined with Correct Registration and Steadiness of Light.

D. HULETT and CO., 55 and 56, HIGH HOLBORN, LONDON,
PATENTEES and MANUFACTURERS of the ONLY GOOD MERCURIAL GAS REGULATOR,
invite the attention of Gas Companies and the Trade generally to their Improved GAS-METERS, which they warrant equal to any in Quality, Workmanship, and Simplicity of Construction, and the only Meters from which Gas cannot be obtained without being duly registered.
MANUFACTURERS OF
GAS CHANDELIERS, GLASS LUSTRES, HALL LANTERNS, VESTIBULES, BRACKETS, PENDANTS;
DOUBLE CONE, ALBERT, SHADOWLESS, & EVERY DESCRIPTION OF BURNER, UNION JETS, BATSWINGS, ETC.
IMPROVED FULL-WAY CARTER'S VALVES (much approved of);
GAS-STOVES, and every article connected with Gas Apparatus.
CAST & WROUGHT-IRON PIPE, BLACK & GALVANIZED. COPPER, TIN, BRASS, & COMPOSITION TUBING.
D. HULETT'S IMPROVED SERVICE CLEANSER
for clearing out Mains, Services, and Interior Fittings—60s. net.
Boyle's Patent Silvered Glass Combination Reflectors and Outside Lanterns.
Sole Manufacturers of Church and Mann's Photometer.
Large Pattern Books, with every description of Gas-Fittings, Chandeliers, &c., with complete Book of Prices, 12s.

London: Printed by WILLIAM BOUGHTON KING (at the office of Joseph Clayton, 17, Bouverie Street, Fleet Street); and published by him at No. 11, Bolt Court, Fleet Street, in the City of London.—Tuesday, February 15, 1859.